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*History of the Berwickshire
Naturalists' Club, Instituted ...*

Berwickshire Naturalists' Club
(Scotland)., Berwickshire Naturalists' Club

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May 6, 1901 - March 12, 1902

NOTE.

This volume of the Club's History should not appear without some brief note expressing a sense of the great loss which the Club has so recently suffered by the untimely death of Colonel David Milne Home. As Organising Secretary of the Club for the last two years, and as its former President, he had, by his high character and his clear intellect, won the sincere attachment of its Members, and of his Colleagues in the conduct of its work ; and at future Naturalists' excursions the absence of his cheery energy and kindly disposition will, by the wide circle who enjoyed his friendship, be felt keenly as a personal loss.

In the next volume, which will record the work of the Club during this present year, 1901, space will be devoted to a short Memoir of him.

December 1901.

HISTORY
OF THE
BERWICKSHIRE
NATURALISTS' CLUB.

INSTITUTED SEPTEMBER 22, 1831.

"MARE ET TELLUS, ET, QUOD TEGIT OMNIA, CÆLUM."

VOL. XVII.—1899-1900.

A_{ALNWICK:}

PRINTED FOR THE CLUB
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Naturalists' Club

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INTRODUCTORY NOTE.

WHEN the lamented death of our late Secretary, Mr Gunn, rendered it imperative that the editing of the current number of the Proceedings should be undertaken by somebody, and that at once, if the good results of all his energy in bringing our publications once more up to date were to be preserved to his successor, it was only with the greatest reluctance, owing to lack of leisure time, that I consented to take up the work, and now that it has been accomplished I feel that the indulgence of members must be craved for many deficiencies and shortcomings.

I have done my best under adverse circumstances, but the work, though a labour of love, has been considerable, and could scarcely have been overtaken but for the ready help extended to me upon all sides. The thanks of the Club for assistance thus rendered are especially due to our late President (Mr Smail), Mr John Ferguson, Mr J. C. Hodgson, and Captain Norman, and to these gentlemen, as well as to all who have helped me with papers, I would here desire to tender my best acknowledgments.

GEORGE BOLAM.

Berwick-on-Tweed,
October 1900.

History of the Berwickshire Naturalists' Club.

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MAY 6 1901

PROCEEDINGS
OF THE
BERWICKSHIRE NATURALISTS' CLUB.

*Address delivered to the Berwickshire Naturalists' Club
at Berwick, 12th October 1899. By JAMES SMAIL,
F.S.A. (Scot.), Edinburgh.*

LADIES AND GENTLEMEN,

I begin my address by first saying that my thanks are due, and I give them sincerely, for the honour done me by the Club in electing me President for the year. I have been a member for 33 years; but for many years before my admission I had been conversant with the Club's movements, and had enthusiastically perused its printed Proceedings, lent me, as they appeared from time to time, by one of its oldest members. From circumstances somewhat beyond my control, I was, to my regret, unfortunately unable to attend the Club's meetings for about twenty years; but two years ago I wrote to my dear old friend, the late Dr Hardy, telling him that "the joy of freedom" had dawned on me, and that I would gladly renew my old love, and roam again over the Club's happy hunting grounds with my fellow

members. To this I received from him a kind and hearty reply. From what I have said, I trust you will readily understand how gratified I felt when, a year afterwards, you made me President.

I also beg to express my gratification for the kindness shown me by members at all the meetings of the year, and I wish to record my thanks to the Rev. Mr Gunn, the Club's Secretary, and to Mr Bolam, our Treasurer, for the kind and ever-ready aid they have given me in all matters pertaining to the Club.

At this stage of our meeting it is my duty to bring to your remembrance the loss the Club has sustained during the year from the death of some of the members. Those members each took a warm interest in the Club, and all, or nearly all of them, had on several (some of them on many) occasions joyously roamed with us on our pleasant journeys in field and forest, and had, besides, been often helpful in various matters connected with our pursuits. I am certain that we, one and all, deeply deplore their departure, and that a number of us shall long hold them in tender, as well as pleasing, remembrance. As I understand that a separate notice of most of those deceased members will appear in the Proceedings of the year, I shall now give only their names. These are:—

His Grace the Duke of Northumberland, Alnwick Castle, who became a member of the Club in 1868.

Mr Robert G. Bolam, Berwick, who joined in the same year.

Lord Napier and Ettrick, who joined in 1881.

Mr Richard H. Dunn, Earlston, who joined in 1886.

Surgeon-Major-General S. A. Lithgow, Edinburgh, who joined in 1894.

After these remarks I may now, I think, say a few words regarding the study of Natural History. To a large portion of the human race it brings its own

reward. It yields, as you well know, much intellectual, as well as pleasing physical enjoyment. Members of the Club are fully conscious of the pleasure and profit they derive from its study, and are also conscious of the kindly intercourse and warm friendships that have been engendered at the field and social meetings of the Club. However much we may individually differ on many of the themes and problems of life, here we are at one, with a strong love for all that pertains to the natural history of our own lovely district of country.

To people of kindred tastes throughout the land—let me say throughout the universe—the study of natural history never fails to yield such pleasure and gratification as I refer to, hence the establishment of such Clubs as this.

To know botany, ornithology, or entomology scientifically, indicates culture of a high order; and to proficients in the study of these subjects the world is much indebted, both for delightful reading and for the correctness of the information which they lay before it. We can imagine the "glory and the joy," the wordless pleasure, experienced from time to time by skilled observers and writers when pursuing their work connected with any of the subjects named, either out-of-doors or in the study. Then, along with fully knowing the scientific elements of their respective studies, and finding pleasure therein, they enjoy in a more elevated degree what may be called the higher parts of their researches, the spirit and the beauty of whatever they carefully observe and study, and this even apart from the scientific element. It is pleasant, too, to know that a very large portion of the world's inhabitants, possessing little or no scientific knowledge of natural history subjects, but loving the old earth on which they live, thoroughly enjoy many of the higher elements of beauty, the food for thought, which a little study of such subjects naturally reveals to them.

There are books and books innumerable, many of them finely illustrated and costly, on the three divisions of natural history I have named, but many of these are written by mere compilers, clever bookmakers. Such books as the latter lovers of natural history generally avoid, for they quickly detect the want of practical natural history experience and keen observing power that all writers on such subjects should possess before venturing to publish what they write. But, on the other hand, we have a host of splendid authors, many of them possessing genius, who charm us with their books on these subjects; authors who carefully and industriously observe for themselves, who glory in their work, and delight the world with it. Such authors as Macgillivray, Gilbert White, Knap, and Alexander Wilson, are fair and good examples of an almost countless number of careful observers and writers on natural history. The reading world may well be, and is proud of them. The enjoyment and the knowledge imparted by these, and such writers as these, to millions of our race, no one can estimate. Many of them, however, have both our gratitude and love. But though many a member of this Club, and of other similar societies, knows that in the appreciative perusal of the writings of the most correct, enthusiastic, and almost exhaustive observers, great though the charm be, a really more satisfactory enjoyment comes to him when in field or forest he, from patient and careful observation, personally learns something definite of the many deeply interesting ways and movements of birds, insects, and plants.

But as lovers of nature we by no means confine ourselves to the study only of such subjects as I have named. When afield, we seldom fail to note and admire the beauty and grandeur of the scenery around and above us, the fine revelations of earth and sky. There is, for instance, an unspeakable charm for us in our fine grass-green Border hills, either when sun-bright or in

soft dreamy shade, and in our many rich romantic valleys and fine rivers. A notable spell of almost absolute stillness, too, at times seems to hang and linger over our hills and valleys. This to some produces a touch of sadness, and to others a sort of romantic delight. No one felt the impressive power of that stillness in its pensive form more than Wordsworth, as expressed by him in his *Yarrow*.

Now, let me say in a word: we delight in the work of the Club, and in the beauty and the glory of all we see and feel in our pleasant wanderings over hill and dale.

“Man cannot stand beneath a loftier dome
Than this cerulean canopy of light,
The Eternal's vast immeasurable home,
Lovely by day and wonderful by night,
Than this enamelled floor so greenly bright
A richer pavement man hath never trod ;
You cannot gaze upon a lovelier sight
Than fleeting cloud, fresh wave, and fruitless sod,
Leaves of that boundless book writ by the hand of
God.”

A number of my worthy predecessors in office have, in their respective addresses at the annual meetings of the Club, given a *resume* of the work done at the field meetings of the year; but this, with your leave, I shall dispense with on the present occasion. I do so because you will, as you are aware, get detailed accounts of these meetings when the Proceedings for the year are issued. I may mention, however, that all the meetings of the year were well attended, and were successful, and that we had the good fortune to have bright sunny weather at every meeting.

I shall now address you shortly on some of the changes in the distribution of some of our district birds

during the last sixty years, saying also something of the ways of some of the birds. During that time some of the birds that were fairly numerous in the earlier years of the period named are now very scarce, the goldfinch having, for instance, disappeared, or all but disappeared. On the other hand, some of the bird classes that were thinly populated sixty years ago, are now in several cases numerously represented, the starling being excessively so.

THE RAVEN.—I may begin with the raven. In Hen-hole, on the Cheviots, long ago, two pairs of ravens regularly nested, but for a number of years only one pair have nested there. The only other place I know of on the Scotch side of the Borders where ravens still breed, is a high cliff in Dumfriesshire. It would indeed be matter of regret to us all were these beautiful and noble birds driven from their Border haunts. They are most sagacious birds; they are easily tamed, and can be trained to speak a few words, and to cleverly imitate a trumpet call. I have heard a Border raven do all this with accuracy, and this it did apparently with an exultant relish. But though the raven readily displays this light side of his nature, he is in reality a solemn, though both a brave and bold bird, and no home bird can match him in dignity of mien. In fight, his only masters in this country are of the eagle tribe. I saw in Kelso, two years ago, a young raven of almost full growth put into an aviary beside two fine peregrine falcons. I wondered what the result would be, and immediately saw it. The hawks were sitting on the highest perch, and they silently stared, their wild expressive eyes glittering, when they beheld the raven placed on the floor of the aviary; but they no sooner saw him begin (which he did at once) to hop upward, perch after perch, than they screamed and *keelie-keelied* at a great rate. When he reached their side, with a

fierce croak, he dashed the side of his head and powerful beak against the hawks, and sent them tumbling to the ground, where for a short time they sat in utter dismay. They were unhurt, however, as the raven had neither bitten nor tried to bite them. They shortly after ascended a few perches, and stood side by side, glancing upward at their new companion, but he took no heed of them. He had made himself master of the abode; and when I heard about him some time ago, it was to tell me he was still master, and that he and his two neighbours were getting along without quarrelling, but without any hobnobbing.

THE CARRION CROW.—Carrion crows, or blacknebs, are scarcely so numerous as they were from twenty to thirty years ago on the Cheviots, so that sport for the gunner has somewhat improved of late. More than any hunting bird this crow preys on the eggs of grouse, red and black. He is besides, during summer and autumn, ever on the look-out on the moors and hills for "cheepers" and weakly birds, on which he also preys. He eats much more fresh meat than carrion. The male and female always hunt together, unless when accompanied for a month or two by their young. I have seen as many as five pairs hunting at a time, each pair far apart from the other pairs. This was on Peelfell. Once, when at lunch there, a friend said he thought the crows we thus saw flying and sailing overhead were rooks. I thereupon ventured a long shot, and was so fortunate as to bring down one, which, as I expected, proved to be a carrion crow.

ROOKS.—Notwithstanding an almost incessant war and outcry of late years against rooks, for their depredations on the farm lands, and on eggs and young of game birds and farmyard fowls, they do not seem to diminish in number. Every one who knows of the very large number of rookeries in the Club's district must be aware that rooks abound in far too large numbers all over it

for either the good of the farmer or the sportsman; whereas if they were in moderate numbers, as they were fifty to sixty years ago, they would benefit all concerned. The numerous grubs, wire-worms, and other land pests which they pick up and devour are simply incalculable, and the vast amount of benefit they, by this, yield to the husbandman it is impossible to estimate. These grubs, etc., are their natural food, and, if found in abundance, rooks would partake but sparingly of any other kind of food. As matters stand, however, on account of their excessive numbers, it may be asked, what is it that rooks will not eat. They are certainly omnivorous, and have been so for many years, though sixty years ago they were not. That was when they and the quantity of their natural food were, in a sense, proportionate. It would go far, in my opinion, to establish an equilibrium as regards rooks and a fair supply of their natural food, were large rookeries much reduced in size, and many rookeries, where they are numerous, altogether destroyed. This done, I have no doubt rooks would soon regain the esteem of those who at present suffer from their depredations; for moderate in numbers, the birds would find abundance of the food they naturally prefer, and would benefit the husbandman, as I have said.

Apart from his eating and thieving proclivities, the rook is a delightful bird. I have carefully watched him and his "ways that are strange" for very many years, and I do not hesitate to say that he is the most observing and wisest bird in our island. For wisdom, and pluck, and trick, the jackdaw and magpie have no chance with him, taking them either in their wild or tame state. I have long been conversant with them all in both states, having for years had tame rooks (one of them could almost speak to me) and jackdaws, with an occasional magpie, and many other wild birds. They were placed in houses and aviaries, and some had the

freedom of running or flying at large in the garden. Many of you have watched with pleasing interest the ways of birds when tending their young. Their never-ceasing and ever-active care is simply delightful to witness; and, connected with this, in many instances we ourselves might take lessons from these haunters of our woods and fields. For instance, it is a treat to watch an old wary mother-rook learning her young to fly, and brings to one's mind a mother teaching her child to walk. The young rooks are taught to fly one by one. The old bird sits on a twig or branch very close to the nest, and, of course, in full view of the young one about to make its first essay in airy flight. When the old bird is so placed, she utters a low sound and hops on to another near branch, looking and moving in an inviting way, which the young one quite understands. It then, after some hesitation, makes a shaky attempt to hop on to the nearest branch, about a foot from the nest. If successful, the old lady at once hops to it, and almost caresses it. This encourages and gives confidence to the learner. Then a further-out branch is attempted, the parent bird being near and ready to help, should a fall-off be imminent. This goes on from day to day, with an increase in length of hop or flight, until the whole nestful of young can do fairly well for themselves in the way of flying. A more difficult flight to learn, which is also taught by the parent birds, is to dive down through the air from a great height in a very strong wind and alight, each bird on its own rookery tree. It is a fine sight to see this operation, and it generally occurs when the birds return to their rookery after being long afield, and they descend with the velocity of a bolt from a bow. On an early morning in June, I had the pleasure of seeing some old rooks teaching their young to dive. This was on Blackford Hill, Edinburgh. The diving was done from a high altitude, and was carried down past the precipitous cliff

on the west side of the hill. This was repeated again and again. The old birds led the way, and the young being merely learners, and not so strong of wing as the adults, were occasionally blown far out of the course aimed at. Before each dive they always hovered a minute or two in the wind, high above the cliff. My seat was a short way from the edge of the cliff, but I sat very still, and the rooks paid no attention to my presence.

THE JACKDAW.—A somewhat wonderful change has taken place within the last fifty or sixty years as to the population and ways of the jackdaw family. I remember the time when almost the only nesting places of these birds were ruinous abbeys and towers, and precipitous cliffs overhanging rivers and disused quarries. Now they nest in vast numbers in all the accessible crannies and nooks in the heart of the busiest manufacturing and other towns in Roxburghshire and Selkirkshire, and are a plague to householders because of their nesting and their never-ceasing to attempt to nest in their house chimneys. They, by hard and persevering work, often dislodge wires fixed on chimneys to prevent their nesting. They also now nest pretty freely in the same woods with rooks, and build open nests like these birds. These nests are more compactly built than rook nests, and the densest trees of the rookery are always selected for sites. The immense increase of late years in their numbers, and the decrease perhaps in the number of their old holdings, have no doubt driven the daws into fresh fields and pastures new as regards habitation. Now, too, they fly afield with rooks more numerously and more frequently than they did of old; and when so flying, it is interesting to note that their flight is always in the most airy ranks above the rooks. After nightfall, at the time when rooks and jackdaws have young ones in their

nests, the male birds at such a time almost always sit outside the nests. In connection with this, I have noticed in moonlit nights, in Galashiels, that the out-sitting jackdaws did not take up their abode for the night on the buildings where their mates were at rest on their nests, but perched instead in the neighbouring rookery beside the male crows. One could see, too, against the moonlit sky that the daws were always perched higher than the rooks. When a rookery is invaded or disturbed during the night, every rook, without fail, either sits still or flies off in dead silence. Jackdaws act otherwise; for should they get disturbed (and a mere trifle disturbs them) in the rookeries where they take shelter for the night, they set up a tremendous cackling and chattering, both on their perches and when flying, no doubt to the annoyance of their silent and more dignified neighbours, the rooks.

WOOD PIGEONS.—Few birds are more widely dispersed than wood pigeons. They exist more or less over all Northern Europe and Asia. When winter sets in severely in the colder countries they migrate southwards in large numbers. About October and November they used to increase largely in Great Britain, leaving this country in the spring for the deep forests on the Continent. It is now believed, however, that few (if any) wood pigeons leave our islands for other countries; and, on the other hand, the increase that used to be so great some fifty to sixty years ago in October and November, is now scarcely perceptible in these months. The cause of one of the changes in the movements of these birds is easily understood. Within the period named there has been a large increase in this country in the woods in which they find shelter, and in the supply of food upon which they subsist, the latter caused by the large increase in the breadth of land laid down in crops on which they feed. The birds, from this, have

found for many years such abundance of food and shelter in these islands that they have made our country a permanent home. In face of this plentiful food supply, however, it seems somewhat strange that wood pigeons have all but ceased to leave Northern Europe for the comfortable winter and spring quarters of Great Britain. Perhaps they know that we always have a largely superabundant stock of their fellows! They are lovely, peaceable birds, and there is ever a charm in hearing them repeat their "wood notes wild" amid the stillness of the forest; but romance and sentiment are apt to fly off when we think of their insatiability as to food, and of their capacity for devouring such vast quantities of it. I have seen as many milk-green oat-pickles taken from the stomach of a wood pigeon, shot while feeding, as would have filled a moderate sized breakfast cup; and the bird, of course, had a feed similar to this several times a day. The country is doubtless very largely overstocked with wood pigeons. They do great damage to our crops, both from what they eat and what they destroy. Any good they do is infinitesimal, the mere picking up of a few caterpillars.

THE MISSEL THRUSH, during these years, has maintained its numbers pretty equally. It is a very bold bird, as you know. Some years ago, I came on one sitting on eggs, when I quietly put my walking stick before it. In place of flying off, it kept its nest, and struck the stick several times with its beak. It showed no sign of fear.

THE BLACKBIRD has also maintained its numbers, perhaps increased, of recent years. I have observed a difference in the notes of the blackbird in different districts, or rather, I should say, in the articulation of the notes. For instance, there is a difference (not much, however) in the articulation of the song of the blackbird

in the neighbourhood of Edinburgh, compared with its song in Roxburghshire.

THE SONG THRUSH.—During the years referred to there has been only one very decided change in the numbers of the song thrush, and that was some seventeen years ago, when a long and very severe frost either drove away or killed nearly the whole of the song thrushes of the Borders. For a year or two afterwards very few of these birds were seen, and their spring and early summer songs were sadly missed by all lovers of their notes. They gradually increased, however, and for a few years there has been a full complement of these songsters.

WATER OUZEL.—The lively water ouzel, or dipper (the Scotch water crow) has maintained its numbers during all these years. It is a familiar sight to all who wander by the trout streams of the Borders, and in every river or burn frequented by it the angler will find trout; this because the food on which the dipper lives is exactly of the same description as that on which trout feed, and trout streams are plentifully stocked with such food all the year round. Worms similar to earth-worms are bred and live in vast numbers in the shallower parts of the rivers and brooks, and these yield much food for both trout and ouzels. Then the number of caddis-worms, creepers, and larvæ in the streams of rivers, and even of small burns, is simply immense, so that there is ample food for all concerned.

Some writers blame the dipper for eating largely of the spawn of salmon and river trout. I have no doubt it now and again picks up such food, just as river trout themselves do, but I feel certain that its chief food consists of what I have just enumerated. I have seen much of the bird and its ways in my very frequent angling expeditions, lasting over a long course of years,

and I never once saw it on a spawn bed. This at least goes to show that its *penchant* for ova is not strikingly noticeable. This bird is a true winter songster, and it is very pleasant to hear it singing in mid-winter, perched, as it often is, on an ice-covered stone. It sings most at dawn and in the gloaming, and its little voicings are so low that you must listen in order to hear them.

STARLINGS.—Sixty years ago, in Roxburghshire, almost the only starlings to be seen were caged birds. A wild starling was a comparative rarity. For many years after these birds had become fairly numerous, they were somewhat migratory, and were ever on the move, as seasons changed. Now, though large numbers migrate, we have always a large number fairly settled with us. In the latter part of the year, in some seasons, these birds visit some localities almost in swarms. A few years ago, a friend, Mr George Riddell, asked me to visit him at his residence in East Lothian, with a view to my seeing a novel flight of starlings. This was late in autumn, and the house, with large shrubberies and gardens, stands about half a mile from the sea, and close to the sea there is a long Scots fir plantation, to which the starlings referred to flew every evening for several weeks for rest and shelter. A little before nightfall we placed ourselves in front of the house, and faced in the direction of the Lammermuirs, whence my friend had told me the flight of birds came. They soon began to appear, flying at a great height, and as the numbers increased they formed a really wonderful sight. As far as the eyes could reach, mile on mile, the flying birds somewhat darkened the sky, they were so close and numerous, and as to numbers they were far beyond any person's power to compute, or even to guess at. The flight continued till nightfall, and all the birds harboured in the fir plantation referred to. A few days

later an alteration in the weather, bearing very cold, stormy wind from the sea, forced the birds to leave their seaside firs and take up more sheltered quarters. This they did by simply invading my friend's shrubs and bushes all around his house. This lasted for a few nights, until, in self defence, he had to drive off the birds, which was done by firing blank cartridges near the shrubs. The shrubs were receiving injury from the absolute load of birds they had to bear, and the air in and around the shrubbery had become less or more tainted, hence the necessity of having the birds driven off. The cause of the great increase in the number of starlings of recent years has been guessed at by some ornithologists, but that cause, it appears to me, takes the nature as yet of an unsolved problem.

LARKS AND STARLINGS.—It has been, and still is, a matter of common talk with a considerable number of observers of a kind, that the starling has for years so encroached on the natural grounds of the lark that the latter has of necessity had to desert its old haunts and take to other habitations, or perish. This, however, seems to be a statement only, for, so far as I at least am aware, no authentic information has been produced proving the accuracy of such a statement. No doubt, since starlings have become so numerous in many districts, larks have fallen sadly off in number in some of these districts; but, as I have just said, we cannot prove that the decrease in their number has been caused by the presence or movements of the starlings, usurpers though they may seem to some people. Judging from my own observation, I may state that I do not think that the present scarcity of larks in districts where they used to be numerous has by any means been caused altogether by the presence, however numerous, of starlings in these districts.

Great changes in the movements and habitation of

many different kinds of birds have, time out of mind, occurred again and again in our country—I may say throughout the world—and the cause of such changes, in nearly all cases, has generally proved a mystery even to naturalists of the highest order. In keeping with this statement, let me instance the plague of voles some years ago in the Borders. How they, in a sense, almost suddenly swarmed over the land for a time, and afterwards as suddenly disappeared, must ever remain a mystery. Starlings do not nest where larks nest; and though the lark's food is readily partaken of by the starling, we know that the latter will as readily eat the food of almost any other bird, for the starling, unlike the lark, is about next door to omniverous. No bird can pick a bone more quickly clean than a starling. Besides, there is sufficient food for all the bird family, and a scarcity of that article could not possibly be the cause of the lark's desertion of its native haunts. Then, though the starling is a lively and plucky bird, he is in reality amiable and peaceable. I have often watched small flocks of starlings feeding along with blackbirds, thrushes, finches, and sparrows, and I have never observed any particular tendency to combativeness in these cases on the part of the starlings. A robin or a house sparrow is much more pugnacious than the starling. As to the distribution of the lark, it is not so scarce as is generally believed by many of those who do not observe closely for themselves, and it is more numerous now in our district than it was a few years ago. Let us trust that this favourite bird will go on increasing in number. I may mention that Fifeshire, a county I lived in for years, and with which I am familiar, is a very stronghold of larks. It is stocked to perfection. When walking on the High Street of that busy town Kirkcaldy, I have on many occasions heard larks singing overhead. The lark is gregarious in the late autumn, as you are aware. At that time they assemble in great flocks, and

range along the rich lands facing the sea in that county. I have often been charmed with the sight of thousands of larks so assembled. They seem more tame at the season to which I refer than in summer, and you may approach them closely without disturbing them.

BULLFINCHES have increased in number in my time. They now frequent the old woods in Upper Berwickshire, where fifty years ago they were all but unknown. I have often found their nests in the bosky policies of Springwood Park, and there is a fair sprinkling of them on Jed Water.

THE BLACKCAP WARBLER I have only once seen on Jed Water, nearly fifty years ago. I was led to it by its fine singing; and some thirty-eight years ago I saw several blackcap warblers, and heard them singing at Springwood Park. It is a very rare bird in Roxburghshire.

THE GOLDFINCH.—Long ago, I now and then came across goldfinches in Roxburghshire, and I have seen their nests often. They now seem extinct in that county. It was for long popularly believed that the birds had died out or forsaken the district, because of the scarcity of what was supposed to be their favourite food, the thistle, that emblematic plant having been so cleverly eradicated from the land by the fine and effective cultivation of the soil under a spell of high farming. Of course, farmers laughed at the popular belief, knowing well that "the auld Scottish thistle" will show its bloomy heads in goodly numbers as long as the land contains any growing power.

The grey linnet seems scarcely so numerous as of old, but chaffinches, yellow hammers, and green linnets keep up in number, as do also the families of tits and wrens, with the exception perhaps of the long-tailed tit, which

now seems somewhat scarce. Warblers also maintain their footing. Redbreasts are as numerous as ever, but the field sparrow is more sparse than it was of old. But I should mention, by the way, that the gold-crested wren has done more than maintain its numbers, for it has increased considerably within the last fifty years. I have often found its nest, and in every instance this was found on the outer point of a spruce tree branch, some six or eight feet from the ground. The nest is placed on the under side of the branch, and is pretty well covered above by the foliage of the tree. It is a beautiful nest, and in windy weather both old and young birds must get a deal of tossing to and fro and up and down in it.

BROWN WREN.—A peculiarity of the brown wren, the kittie—"that little fowl with voice so big"—is its love of nest building. During the time the hen bird is sitting on eggs the male bird spends much of his time in building additional nests. These are built in the near neighbourhood of the first nest, and are fixed in the places where wrens generally build. The nests so built are all properly finished, but are never feathered inside, and consequently are never occupied for breeding. The boys in my time called them cock nests.

I shall conclude by now giving an example or two of word painting, connected with what some of the song birds say; but you will, I am afraid, find it difficult to hunt up many of the words in any dictionary. Some of the poets of the Elizabethan period tried in this way to convey in peculiar words what the nightingale musically poured forth, but without success, in my opinion.

The missel thrush insists in singing out to all concerned, "*trio trio trio, do do do, trio trio.*" One of the warbler family occasionally replies with "*twee twee*

tee." The yellow hammer never asks for more than "a little bit o' bread and no cheese." The chaffinch "*fink fink's*" a deal, and often reminds his mate that she is "*a wee-wee, wee-wee drucken sooie.*"

The linnet speaks well out to his mate on the matter of food, and she is ever ready in response:—

He: *Beetle-run, beetle-run!*
 She: *Seek-it-oot! Seek-it-oot!*
 He: *Caterpillar! Caterpillar!*
 She: *Pick it up! Pick it up!*
 He: *Hairyoo-bit! Hairyoo-bit!*
 She: *To me w'it, to me w'it!*

Jenny Wren's song:—

*Merry merry, grab-a-cherry,
 Peck a hairy-fairy berry,
 Scurrie-urrie-it.*

Thomas Pringle of Roxburghshire and South African fame, early in the century, wrote an amusing honey-bird song, too long to be read at present. I give you a verse or two of how the birds speak in South Africa:—

The Honey-bird sat on the yellow-wood tree,
 And aye he was singing *Cherr-cherr-a, cu-coo-la!*
 A-watching the hive of the blythe honey-bee,
Cherr-a-cherr, Cherr-a-Cherr, cherr-a, cu-coo-la.
 The bees they flew in, and the bees they flew out,
Boom-a-boo, foom-a-boo, boom-a-buzz-zoola!
 And they seemed to buzz round with a jerk and a flout,
Boom-a-boo, foom-a-boo, boom-boom-a-foo-la.
 Ha! ha! cried the woodpecker, here's a strong plea,
Tic-a-tac, tic-a-tac, chop-at-a-hoola!
 I now see the justice of robbing the bee,
Tic-a-tac, tic-a-tac, snap-at-a-snoola.

Lastly, I repeat to you Allingham's verses, "The Lover and the Birds":—

Screamed Chaffinch, "Sweet, sweet, sweet!

Meet me here, meet me here!"

Chaffinch be dumb, in case thy darling prove no better
than a cheat.

The man forlorn hears earth send up a foolish noise aloft.

"And what'll *he* do? what'll *he* do!" scoffed the blackbird.

Worse, mocked the thrush, "*Die die!*"

"Could he *do* it? could he *do* it? Nay!

"Be *quick!* be *quick!* Here, here, here.

"Take heed! take heed! Why? why? why?—Why? why?

"See-ee-now! see-ee-now! Back! back! back! R-r-r-run
away!"

(The Lark.) "Air, air! Blue air and white!

Whither I flee, whither, O whither, O whither I flee!

Hills many waters glittering bright,

Whither I see, whither I see! deeper, deeper, deeper,

Whither I see, see—see."

It is now my pleasant, but last, duty to nominate my successor, and this I now do by nominating, as President for the next year, Mr A. H. Evans, Cambridge. He has been a member of the Club for twenty-four years, and his attainments in the paths of natural history are well marked.

*Reports of the Meetings of the Berwickshire Naturalists'
Club for 1899.*

BERWICK.—By the Secretary.

THE FIRST MEETING of the year 1899 was held in the Museum, on Wednesday, 26th April, in accordance with the resolution of the Annual Meeting of last year.

The following members were present:—Mr James Smail, F.S.A. (Scot.), President; Rev. George Gunn, Secretary; Mr George Bolam, Treasurer; Colonel Milne Home, Caldra; Captain Forbes, R.N., Messrs D. Herriot, R. Weddell, W. Weatherhead, W. Maddan, W. Wilson, Berwick; J. Ferguson, Joseph Wilson, D. Veitch, Duns; W. T. Hindmarsh, Alnwick; G. P. Hughes, Middleton Hall; J. A. Somervail, Broomdykes; G. G. and Mrs Butler, Ewart; Revs. David Paul, LL.D., Edinburgh; R. Charles Inglis, Berwick; and Hugh Fleming, Mordington.

The dates and places of meeting for the ensuing year were fixed as below:—

- 2.—Earlston, for Chapel, Carolside, etc., on Wednesday, 31st May.
- 3.—Berwick, for Farne Islands, on Thursday, 21st June.
- 4.—Selkirk, for Whitmuirbog and Riddell, on Wednesday, 19th July.
- 5.—Kelso, for Makerstoun, Ringley Hall, Plea Hill, and Littledean Tower, on Wednesday, 23rd August.
- 6.—Seaton Delaval, the Coast, and Tynemouth, on Thursday, 21st September.
- 7.—Berwick, Annual Meeting, on Thursday, 12th October.

The Secretary, Mr Hodgson, Mr Ferguson, and the Treasurer gave in reports of their examination of the papers and MSS. of the late Dr Hardy.

The mode of commemorating Dr Hardy was then considered. The Secretary intimated that a Memorial Notice for the Proceedings was being prepared, and, after some discussion, Colonel Milne Home moved "That the Club agree to erect in memory of the late Dr Hardy, our esteemed Secretary, a Window and Brass Tablet on the walls of Coldingham Priory Church, subject to the approval of Mrs Hardy and his other relatives." This was seconded by Mr Ferguson,

and unanimously agreed to, and the following Committee were elected to carry the matter out, viz.:—Colonel Milne Home, Dr Paul, Mr Butler, Mr Hindmarsh, Captain Forbes, The President, Secretary, and Treasurer. Colonel Milne Home, Convener.

It was further remitted to the Committee on Dr Hardy's MSS. to consider and report at the next meeting as to the advisability of publishing a Memorial Volume, and as to its probable size and cost.

The question of carrying on the work of the Club by Sections and Committees, as described by Mr Hindmarsh in his Address in 1895, was next considered; and after a statement had been made by Mr Hindmarsh, it was moved by Mr G. P. Hughes, and seconded by Rev. Dr Paul, "That a Committee be appointed to consider and bring up to the October meeting a detailed report in connection with the suggestions made." This motion was agreed to, and the following Committee were appointed:—Mr Hindmarsh, Dr Paul, Mr Maddan, Captain Norman, The President, Secretary, and Treasurer. Mr Hindmarsh, Convener.

It was further resolved to ask the Committee on Dr Hardy's MSS. to report on the Club's books, and the arrangements for their safe keeping.

The Rev. Thomas Marjoribanks, The Manse, Houndwood, proposed by Rev. Dr Leishman, and seconded by the Rev. J. F. Leishman, was nominated for membership.

A letter was read from Mrs Hardy, thanking the Club for their expression of sympathy, and also one from Mr Richard Howse, Secretary of the Natural History Society, Newcastle, conveying the sympathy and regrets of that Society on the great loss sustained by the Club by the death of Dr Hardy. A letter of thanks from Mr J. G. Goodchild, upon his election as a Corresponding Member of the Club, was also read.

Apologies for absence were intimated from Sir George Douglas, Bart., Springwood Park; Captain Norman, R.N., Berwick; C. B. Balfour, Newton Don; J. L. Campbell Swinton, Kimmerghame; and W. B. Boyd, Faldonside.

The members afterwards dined together at the King's Arms Hotel.

EARLSTON.—By the President.

THE SECOND MEETING was held at Earlston, on Wednesday, 31st May, and was largely attended, the following members and guests being amongst those present:—Mr James Smail, F.S.A. (Scot.), President; Rev. George Gunn, Secretary; Mr George Bolam, Treasurer; Colonel and Mrs Milne Home, Mr and the Misses Milne Home, Wedderburn; Mr Campbell Swinton, Kimmerghame; Rev. Dr Sprott, North Berwick; Dr Stevenson Macadam, Edinburgh; Dr Stuart, Chirnside; Mr W. B. Boyd, Faldonside; Mr J. Ferguson, F.S.A. (Scot.), Duns; Mr and Mrs Butler, Ewart Park; Ex-Provost Laidlaw, Jedburgh; Mr J. J. Vernon, F.S.A. (Scot.), Hawick; Mr Tom Scott, A.R.S.A., Earlston; Mr R. H. Dunn, Earlston; Bailie Hileon, Jedburgh; Mr Thomas Smail, Jedburgh; Mr W. B. Swan, Duns; Mr Joseph Wilson and Miss Wilson, Duns; Bailie Ford, Duns; Mr Elliot R. Smail, Edinburgh; Rev. Thomas Martin, Lauder; Rev. W. Workman, Stow; Rev. J. Burleigh, Ednam; Dr and Miss Shirra Gibb, Boon; Mr H. Leadbetter, Legerwood; Dr Stewart-Stirling, Edinburgh; Mr D. Veitch and Mr D. Veitch, jun., Duns; Mr James A. Somervail, Broomdykes; Mr B. Morton, Sunderland; Mr D. McB. Watson, Hawick; Mr George Henderson, Upper Keith; Mr Thomas Henderson, Bailieknowe; Dr Marr, Greenlaw; Mr G. Fortune, Duns; Mr Arthur Giles, Edinburgh; Mr Henry Paton, Edinburgh; Mr John Turnbull, Galashiels; Mr Thomas Greig, Wooden; Mr W. Mason, Jedburgh; Mr W. Leitch, Galashiels; Mr D. Leitch, Greenlaw; Mr A. G. Sinclair, Earlston; Herr Albe, Duns; and others.

The President, who, in his younger days, had been for some years resident in Earlston, as agent of the Commercial

Bank, and who is therefore widely familiar with the district, acted as cicerone during the day, being greatly aided in his arrangements by Mr R. H. Dunn and the Secretary.

The party drove in brakes from the Red Lion Hotel, by Morriston, to Corsbie Bog and Tower. They then visited the church of Legerwood and the Pickie Moss, the breeding place of Pickmaws (the local name of the Black-headed Gull) on Legerwood farm, and thence drove to Chapel-on-Leader and Carolside, and afterwards dined in the Red Lion Hotel, Earlston.

In the Proceedings of the Club, Earlston itself has been so often treated at considerable length that very little need here be said regarding its history. The following tradition, however, regarding Thomas the Rhymer, which, it is believed, has never before been printed, may be given.

On a small, partly wood-covered hill, immediately opposite the railway station, an Earl of March had his "hawk house," and the hill still bears the name of "Hawk Kame," and it would certainly prove an airy, dry, and healthy station for the abode of his lordship's falcons. The Hawk Kame is only some two hundred yards from Rhymer's Tower, the abode of the famous "True Thomas." The tradition bears that the Rhymer occasionally visited the Earl at the Kame, using a foot road that led from the one abode to the other; and that on this road, on a dark night, he was waylaid and murdered by some one who feared and hated him, and an idea prevailed that he was cunningly buried where he fell. I should mention, in connection with this, that in the earlier half of the present century a sword of the period of Thomas the Rhymer was turned up in close neighbourhood to where the foot road ran. The late worthy Thomas Gray of Earlston, a keen antiquarian, acquired this sword, and his idea was that it had belonged to the Rhymer. The sword is now possessed by a well-known country gentleman, for whom I purchased it, who claims to be of the family of the poet, and who bears his family name, Thomas Learmouth.

Early in the century badgers were very numerous in the district. The Brock Hill is in the neighbourhood, and there the lovers of badger drawing used to get supplies for their

sport, so called. Some years ago a residenter of Earlston, whom I knew, met a badger quietly trotting along the street one early morning. When it saw him it ran into a drain under the Red Lion Hotel, from which I saw it captured. When shooting at Legerwood and at West Morriston, I have on several occasions seen badgers. In most districts, however, they are now very scarce.

"The Broom o' the Cowdenknowes" is one of our very oldest songs; but so far as regards the broom itself and its local habitation, the glory is departed. There is comparatively but little broom now on or about Cowdenknowes. I think I saw about the last remnants of what might have been called the ancient broom of Cowdenknowes. This was in 1858, and it was then drooping and dying. Some six or eight bushes were still in existence. Their noble stems, some of them nearly twenty feet in length, with thickness in proportion, were stretched along the ground and half covered with mosses and grass, while here and there a green branch or twig showed that some little life still lingered. These remains were in a fir plantation on the Black Hill, facing Cowdenknowes Mansion House. The late Miss Whale, of gingham celebrity, told me that on the White Hill, facing Earlston, on the Cowdenknowes estate, the broom about the end of last century was famous for its growth and strength, so much so that a man on horseback could ride unseen along a path that led through it. Broom, however, does not attain a very old age. The very severe frost of 1861 killed all the broom in Lower Lauderdale. Until it again grew from the roots, the Broomy Brae on the road to Carolside was quite bare.

It was in the red sandstone quarry on the Black Hill, above mentioned, that the geologists of the Club, in 1866, found excellent specimens of the *Holoptychius nobilissimus*. This was really an interesting discovery, and settled for all time what had hitherto been unknown, namely, that the Black Hill is of the old red sandstone formation.

When Corsbie Tower and Moss were reached, the Secretary read the short historical notices of the Tower and of the Cranston family, which were contributed by Dr Hardy to the Club's Proceedings for 1880.

The Tower is still an interesting fragment of a Border Peel, and now consists of two walls and indications of a third, while the fourth has been entirely obliterated. It stands on a knoll among ash trees, surrounded on all sides by Corsbie Bog. Before the bog was drained the knoll would be practically an island, and inaccessible except by a narrow paved way on the north side. The President briefly described some of the salient features of the ruin, and Mr Gunn then proceeded to read a ballad entitled "The Grey Peel," "which," he said, "so well reproduces the characteristics of ancient Border poetry that it is mistaken by many for a genuine old ballad. Additional interest is attached to it from the fact that it is the production of the President of the Club (Mr Smail), who has enriched Border minstrelsy by various poetical contributions of high merit." The ballad is as follows:—

"Auld Wat o' the Grey Peel's dochter May,
Perfection's maiden in form and mien,
Wi' face as bricht as a summer day,
I' the Grey Peel Glen nae mair is seen.

There's naething but grief within the wa's,
Thereout there's dool 'mong women and men,
And ruefu's the strain o' the wind that blaws
Through the shiverin' leaves i' the Grey Peel Glen.

Wi' frolicksome step i' the morning bricht
She brent her way to the Merlindean;
Where voices wail i' the darksome night,
Or wildly laugh i' the moonlight sheen.

But the eerie glen i' the light o' day
Revealed but charms to her laughin' een;
And the sunbright morn that wiled her away
Brought a dreary night, for nae mair she's seen.

Right ready o' help frae the Smailcleugh fit,
Stern Ringan has flown to the sad Grey Peel;
Unpeered he stands i' the forest yet,
For a trusty hand and a bitin' steel.

And gallopin' up comes Ruecastle Hew,
On his Bewcastle naig o' the gude steel grey,
An' Fernihirst grim, but ever heart-true,
Whase ready Kerr hand redds mony a fray.

An' Rumpet Dowford, the ae-lugget loon,
And lang-armed Tam o' the Waterside Toor;
And muckle Wull Elliot o' Jethart toon,
Wi' staff aye ready for ony stoor.

Baith east and wast they muster and rin,
Wi' eager speed the fair May to trace;
And the sad days close as they begin,
And auld Wat manes for her bonnie face.

Six heart-fearin', heart-wearin' weeks are away,
In forest and open a' search in vain,
And hope seems dead for the lang lost May;
It's mystery a' ower hill and plain.

But, hark, what news is this by the way,
Whilk auld and young guars loup i' their shoon,
That May was seen i' the gloamin' grey
On the Toor o' the treacherous laird o' Boon.

And Gilbert o' Corsbie, ready and sure,
Up faced wild Boon wi' an angry ee,
An' vowed he wad clear his lady-bour,
Or he or himself wad surely dee.

Now, Boon for man had never a fear,
Had sinow an' heart o' granite stane;
But his flashing swurde an' his fiendish leer
On dauntless Gibbie effect had nane.

On Boon hill back they take their stand,
An' draw their brands o' the Spanish steel;
Then fit to fit an' hand to hand,
They thrust and parry, syne slash and reel.

But Gibbie has pricket the laird o' Boon,
An' rage-blind now that sic should be,
He springs on Gibbie, but that nimble loon
Strikes life wi' death frae his fause body.

They bury him speedily where he fa's,
 An' rush frae the fatal spot away
 To search the boles o' the auld Toor wa's,
 Wi' beatin' hearts for the lang-lost May.

She's found i' the bour, proteckit right weel
 By Boon's auld tittie—Black Marjorie:
 But soon they light doon at the blythe Grey Peel,
 Where auld Wat laughs and greets wi' glee.

Frae east to wast to the Grey Peel gay
 Gude sprinklings o' blythe company ride,
 To pleasure auld Wat an' his winsome May,
 Now gallant young Gilbert o' Corsbie's bride.

There's naething but mirth within the wa's,
 Thereout there's joy 'mong women and men,
 An' sweet is the strain o' the wind that blows
 Through the whispurin' leaves i' the Grey Peel Glen."

The Secretary reports that the incident upon which this ballad is founded is recorded in "Pitcairn's Trials." Alexander French, Tutour of Thorniedykis (in the parish of Westruther), and John Cranstoun, brother of Patrick Cranstoun of Corsbie, had been rival suitors for the hand of the fair daughter of the Laird of Boon. They accidentally met on Boon Hill, one of them returning from her father's castle and the other going to it. A quarrel about the damsel ensued, resulting in the fatal injury of Cranstoun by French and "James Wicht of Gordon Mylne, his sister-son." This took place on 10th February 1612, and Cranstoun lingered until 1st March, when he died. At the instance of his brother, Patrick of Corsbie, the two murderers were tried at Edinburgh on 13th March of the same year. "Hew Bell in Blithe" was chancellor of the jury who convicted the accused "of crewel unmerciefull slauchter of the said umqle Johnne Cranstoun." The sentence was:—"To be tane to the Castell Hill of Edinburgh, and thair thair heidis to be strukin from their bodeis, and all their moveable guidis to be scheit and inbrocht to his maiesteis use as convict, etc.!" Mr Crockett,

in his "Minstrelsy of the Merse," says:—"The people of the district in which the crime was committed, to mark the abhorrence of the deed, erected an old stone cross on the spot. This relic stands below Old Boon, in a plantation about a hundred yards above the public road leading to the farm of Dods. It is locally known as the Laird's Grave, and the Dods Cross Stane. Old inhabitants of the district also remember their fathers telling them that at certain times the neighbouring farmers and others used to meet at this cross to exchange their lintseed, etc., which gathering was called the Pirn Fair. Not a vestige of the Castle of Boon now remains, but it is supposed to have stood somewhere to the west of 'Dods Rauchan.' The Cranstouns of Corsbie Tower were a branch of the Cranstouns of Crailing."

Of Corsbie Bog it may be said it was once a haunt of the Black-headed Gull (*Larus ridibundus*), but has been deserted since it was drained. There are a few scattered birches in the moss, and some native mallards on its outskirts. The bog sweeps round a long way, till the cultivated ground of Legerwood crosses and occupies the space.

Returning to Legerwood, pleasant prospects were obtained as the party passed along. These included in their scope such prominent features as Hume Castle, the vale of the Leader towards Cowdenknowes, the Eildons, and even some of the Selkirkshire hills. The ancient church of Legerwood, which has only quite recently undergone restoration, was viewed with much interest. When the company had gathered within its walls, the Secretary asked Mr Ferguson, Duns, to read his description of the edifice as he found it a few years ago when he contributed to the Club's Proceedings his paper on "The Pre-Reformation Churches of Berwickshire." Restoration had not been thought of at the time this paper was written, and Mr Ferguson strongly animadverted on the supineness of the heritors in allowing such a fine example of old Norman architecture to remain in the ruinous condition in which it then was. He now expressed the satisfaction which he, in common he was sure with all the members of the Club, felt in seeing this sacred building so carefully and reverently restored with such complete preservation of its

ancient features, notably the beautiful Norman arch of the chancel. The chancel contains the tomb of John Ker of Moristoun, and of his wife, the famous heroine Grissell Cochrane, who robbed the postman near Belford of the warrant for the execution of her father (Sir John Cochrane of Ochiltree, concerned with Sir Patrick Home of Polwarth in the political troubles of the reign of James VII.), and by this means obtained delay till successful intercession was made for his life. An elaborately ornamented tombstone of white sandstone bears the inscription:—

Her rests the corps of John Ker
of Moristown who departed this
life the 27 of September 1691 in
the threth year of his age

As also the corps of
Grissell Cochrane his lady
who died the 21 of March
1748 in the 83d year of her age.

In the chancel there were also seen two sculptured stones, now built into the south wall for preservation—one a pre-Norman cross, and the other a beautifully carved fragment of uncertain date—which were found on the site of the church. Attention was also called to a piscina niche in the north wall and a remnant of the original fresco work, which no doubt covered the interior of the chancel when the church was in its original state. The windows have been filled in with beautifully painted glass. Mr Leadbetter, on the invitation of the Secretary, gave a brief, interesting account of the restoration, in which reference was made to the indefatigable exertions of the late Rev. Mr Rankine, minister of the parish, who, unfortunately, was not spared to see the work completed, and to the generosity of Mr Ligertwood, London, at whose sole expense the work of restoring the chancel had been carried out. Messrs Hardy & Wight, Edinburgh, were the architects who superintended the work of restoration.

Leaving Legerwood Church the party proceeded to the Everett Moss, or, as it has been called, the Dowie Den Moss Loch, or Pickie Moss, where the black-headed gulls, or "pickmaws," nest in immense numbers. To get to it a detour had to be made by Legerwood farm steading. The village, as appears by the number of ash trees in a field at the roadside, had stood near the present dwelling. The loch lies in a hidden retired situation, little liable to disturbance. It has been the haunt of these beautifully white birds from time immemorial. They were seen in thousands skimming backwards and forwards in the reedy water, or ascending in a great cloud, filling the air with their harsh clamour. In the mid-day sun the glancing of so many snow-white wings formed a scene not soon to be forgotten. A pair of teal, a number of mallards, and other water fowl were also observed. It is a matter for congratulation that all these interesting birds are now under the protection of the law during their breeding season. A former Earl of Lauderdale, known as the "Sailor Lord," when in weak health, was ordered by his medical attendant to eat eggs of the black-headed gull gathered from this moss, which he did, and was benefited thereby.

An old friend tells me that at one time something had gone wrong with the sluicing of the mossy loch, and that when the gulls returned in spring, for nesting purposes, they found the moss too dry, and left. This occurred during three consecutive seasons. After the sluicing was made good they returned, but another season or two passed before they "again appeared in countless numbers" on

"The age-long haunts, where they have made
Their marsh-defended nests, and laid
Their mottled eggs, and reared their young,
And o'er it thick as snowflakes hung,
Wheeling and screaming in delight,
A summer's day, & summer's night."

Thus sings my old friend of the "pickies."

At Legerwood farmhouse the company were hospitably entertained to luncheon by Mr Leadbetter. The house is very prettily situated in the centre of an important arable farm extending to 1600 acres, and occupies rising ground, which commands a wide and delightful view of Border landscape. Mr Leadbetter also kindly exhibited a large antiquarian collection, which included a bride's ladle, deposit of salt taken from the bottom of an Atlantic steamer's boiler, a piece of iron which had been stripped from a railway rail at white heat (when the brakes were suddenly applied to avert a collision), Welsh and Highland "cruisies" with rush wicks, bronze spear-head found at Ploughland Burn, Lanarkshire, and many other curiosities. A pair of Whooper swans in the lobby also attracted attention. They were fine adult birds in snow-white plumage, and had been shot in the neighbourhood by Mr Leadbetter a few years ago.

Before reoccupying the brakes, a very cordial vote of thanks was given to Mr Leadbetter, on the motion of the President.

Resuming the drive, the brakes soon entered the policies of Chapel-on-Leader by the north entrance. The name of the estate is derived from the Chapel of St. John, near Kedslie, subordinate to Dryburgh, but no remains of it now exist. The plain, old fashioned mansion was reached by a sweet winding avenue. The house is most exquisitely placed in the valley of the Leader, and is furnished with great taste. The well-kept gardens were visited, and much admired; but not least enjoyable was the view of the finely wooded vale of Leader, obtained from the south windows. As far as the eye could reach the glen was clothed on either side by a varied assortment of magnificent trees in the first flush of their summer beauty. The estate was acquired by the late Mr Roberts of Galashiels a good many years ago. By the kindness of Mrs Roberts, refreshments were served to the company.

Leaving by the south avenue, and crossing the Leader by a neat suspension bridge, a drive of a mile or so on the Lauder and Earlston road brought the party to the entrance to Carolside, situated in the vale of the Leader, and the Berwickshire residence of Lord and Lady Reay. It is a

charming place, its beautifully diversified grounds surrounding the mansion on all sides. Lord and Lady Reay, who were in London, had kindly given instructions for the reception of the Club, and the house and policies—the latter containing a fine herd of deer—were viewed with great interest. On the lawn, near the entrance drive, was pointed out a large flat stone, which had been placed there by the late Captain Mitchell of Stow. It bears the inscription:—"This stone is placed by the directions of Alexander Mitchell, Esq., of Stow, to mark the spot which was the ancient burial place of the Lauder family."

Many years ago there was a large rookery at Carolside, which was destroyed by the late proprietor, Captain Mitchell. The rooks, however, did not fly far afield. They simply went a little further up the valley and nested in Chapel woods, greatly augmenting the rookeries there.

At four o'clock the company dined in the Red Lion Hotel, Earlston. Mr Smail, President, occupied the chair, and the croupiers were Mr Gunn, Secretary, and Mr Bolam, Treasurer. After dinner the usual loyal and other toasts were given briefly from the chair, and a cordial vote of thanks was accorded to Mr R. H. Dunn for the excellent service which he had rendered in connection with the arrangements for the day's proceedings.

In response to the President, Colonel Milne Home, as convener of a Committee appointed at the preceding meeting at Berwick, reported what had been done in regard to a resolution of the Club to erect a memorial to the memory of their late Secretary, Dr Hardy. He read letters received from Dr Hardy's widow, and also from Mr George Hardy, who wrote on behalf of his father, the late Dr Hardy's brother. Both cordially thanked the Club for its kindness, and expressed entire approval of the proposal to place a memorial window in the north wall of Coldingham Priory. The Committee, Colonel Milne Home said, had again met that day, and resolved to recommend the adoption of this proposition. It had been further resolved to issue a circular to the members inviting subscriptions, not to exceed 5s. per member. It was hoped that every member would thus have an opportunity of contributing. He hoped that at next

meeting he would have a further report to submit as to the form of window the Committee might be able to suggest should be adopted. The action of the Committee was approved.

Several gentlemen were nominated for election to the membership of the Club.

Mr Paton, of the Register House, Edinburgh, exhibited a number of old Wedderburn charters of the time of Robert the Bruce. Dr Stuart, Chirnside, had an interesting vasculum of flowers grown by himself. These included *Daphne fioniana*; *Daphne neorum*; Hybrid golden tufted pansies (Stuart); *Erica mediterranea* from Urrisbeg, Connemara; *Aquilegia stuarti*, "Connemara"; *Gentiana verna*; Blue primrose (G. F. Wilson strain); *Hybrid primula*, "General" (Stuart) new, scarlet. (Dr Stuart had an invitation from Sir Trevor Lawrence, President of the Royal Horticultural Society, London, to attend the conference of Hybridists, from over Great Britain and the Continent, at Chiswick, to read a paper on his work, and attend the banquet at the Hotel Metropole, London.) Mr Tom Scott, A.R.S.A., showed a large collection of local antiquities, comprising stone spear-heads, arrow-heads, axes, hammers, etc. One particularly fine green quartzite axe was shown, which had been found near Greenlaw.

THE FARNE ISLANDS.—By the Treasurer.

THE rendezvous for the third meeting, on Thursday, 22nd June, was at Berwick for the Farne Islands, and the morning being gloriously fine a large party assembled on the quay at the appointed hour of 10 o'clock. The steam-boat "Empress of India" had been chartered for this trip, and the following members and their guests were of the party:—Mr James Smail, F.S.A. (Scot.), President; Rev. George Gunn, Secretary; Mr George Bolam, F.Z.S., Treasurer; Colonel David Milne Home, Caldra; Mr D. W. Milne Home, A.D.C. to His Excellency the Governor of Trinidad and Tobago; Miss A. Milne Home, Miss J. M. Milne Home, Sir Archibald Buchan-Hepburn, Bart., General Boswall, Melrose; Major Macpherson, Edinburgh; Mr James Tait, Belford; Dr Stevenson Macadam, Edinburgh; Mr Hugh M. Leadbetter, Legerwood; Mrs Widdrington and Mr George Widdrington, Newton Hall; Mr W. Grant Guthrie, Hawick; Mr Arthur Giles, Edinburgh; Mr Ben. Morton, Sunderland; Colonel Brown, Longformacus; Captain McLaren, K.O.S.B., Berwick; Mr E. Willoby, Berwick; Rev. John, Mrs, and Miss Reid, Foulden; Rev. R. C. Inglis, Berwick; Rev. E. Arkless, Earsdon; Rev. Hugh Fleming, Mordington; Rev. J. A. Findlay, Sprouston; Rev. J. Patterson, Ancrum; Rev. J. S. Goldie, Walkerburn; Rev. G. Ellis, Mr David Herriot, Berwick; Mr Thomas Darling, Berwick; Mr Adam Darling, Berwick; Mr A. Borthwick, Mindrum; Mr T. B. Short, Berwick; Mr J. Jordan, Edinburgh; Mr George Hardy, Oldcambus; Mr J. Hood, Miss Jean and Miss Margaret A. Hood, Linhead; Mr James A. Somervail, Broomdykes; Mr Hippolyte J. Blanc, F.S.A. (Scot.), R.S.A., Edinburgh; Mr A. Riddle, Yeavering; Mr G. S. Riddle, Tweedmouth; Mr R. Amos, Alnwick; Mr J. Ferguson, Alnwick; Mr J. Cairns,

Alnwick; Mr George Craik, Alnwick; Mr Yeoman, Newcastle; Mr J. L. Newbigin, Alnwick; Mr Middleton H. Dand, Hauxley; Mr John Turnbull, Galashiels; Mr James W. Bowhill, Edinburgh; Mr and Mrs Thew, Alnwick; Mr W. M. Pybus, Newcastle; Mr R. Middlemas, jun., Alnwick; Mr F. Webb, Alnwick; Mr J. Lindsay Hilson, Jedburgh; Mr Thomas Greig, Roxburgh; Mr F. Lynn and Mrs Lynn, Galashiels; Dr R. Shirra Gibb, Boon; Dr Dickson, Berwick; Mr O. L. Wigram, Mr E. Blagg, Mr G. Henderson, Upper Keith; Mr D. Bruce, Mr R. C. Smith, Ormiston; Mr T. Smail, Jedburgh; Mr A. Bowie, Langholm; Mr R. Carr, Cheswick Cottage; Mr J. Crawford Hodgson, Warkworth; Mr J. Barr, Berwick; Mr H. Wilson, Berwick; Mr R. W. Hopkinson, and Mr R. T. Mark, *Berwick Journal*.

The weather overhead was all that could be desired, but a heavy ground swell was unfortunately running outside, and as we crossed the bar it became evident that the day would not be one of unmixed pleasure for those who did not happen to be good sailors. However, the *mal de mer*, in the early part of the day at any rate, was not of a sufficiently virulent type to prevent us for the most part enjoying the run out; and the fine views of the coast, with Holy Island and Bamburgh Castle, were much admired by everybody as we steamed along. During the voyage luncheon and refreshments were provided on board by Mr Jack Parslow of Wooler Cottage Hotel, who, notwithstanding the somewhat difficult circumstances under which he was placed, fully maintained his reputation as a caterer of the first order.

In the course of the sail out the Rev. George Gunn made intimation of the fact that Mr Thomas Tate of Allerburn had written him on 14th inst., stating that the Humming Bird Hawk Moth had been frequently seen in his garden during the past week or ten days, and that two specimens had been captured (temporarily) inside the house, one by

himself. He saw by the newspapers that the insect seemed to be quite common in the north this year. Mr Tate added that he had been told of the appearance in that neighbourhood recently of the Broad-bordered Bee Hawk Moth, but he had not seen the specimen. There was also exhibited a bronze spear-head, found by John Hood, wood cutter, Rutherford, and sent by Mr Jackson, merchant, Kelso, a notice of which, with illustration, will appear in the present number.

The Club had three times previously visited the Farnes, viz., in 1854, in 1866, and in 1884, and Mr George Tate's long and exhaustive report upon the islands, which was printed in Vol. III. of the Club's History, as well as Captain Norman's later account of the 1884 meeting (Vol. x.) may be referred to for much interesting detail concerning the history of the islands.

On our arrival at the Inner Farne, where as usual the steamer was moored under the shelter of the eastern shore, the party was joined by boats from North Sunderland, bringing off with them a further consignment of members who found it more convenient to travel by that route, and including Mr H. A. Paynter of Alnwick, through whose kind offices full permission had been obtained for the Club to land where they liked, and to visit the breeding stations of the different birds. Unfortunately, however, the sea was too rough to permit of a landing being effected at more than one or two of the smaller islands, but on the Noxes and Wedums members had an opportunity of closely inspecting the nests of the Terns, Eider Ducks, Puffins, and Gulls.

The majority of the company meanwhile entertained themselves on the Inner Farne by an inspection of the ancient ecclesiastical remains; two stone coffins lying in front of St. Cuthbert's Chapel; the monument to Grace Darling; and the *Churn*, a large fissure in the basalt where the waves

in a storm are churned into spray, which rises to such a considerable height as to be visible from the mainland.

The present Chapel of St. Cuthbert stands upon the site of a much older building, and was restored to its present condition by the late Archdeacon Thorp in 1848, his memory being perpetuated by a stained glass window in the chancel representing the figure of St. Aidan, the first bishop. Another window of equal beauty shows St. Cuthbert, with King Oswald's head in his hand, and is dedicated to the memory of that saint; while a third, in remembrance of Grace Horsley Darling, who died on 20th October 1842, and who was buried in Bamburgh Churchyard, shows the figure of St. Ethelwald.

Suspended over the flowers of the Sea Campion (*Silene maritima*), which everywhere clothes the rocks with its pleasing green foliage and white blossoms, one or two specimens of the Humming Bird Hawk Moth (*Macroglossa stellatarum*) attracted attention, and we were told by the watchers that they had observed several of these moths during the previous week or two. This insect had appeared in the district, and indeed all over the country, in great profusion in the early part of this month, many having been seen or captured in different places; and during a visit to the Farnes on the 8th inst., I noticed them upon more than one of the islands. Upon that occasion also two Painted Lady Butterflies (*Vanessa cardui*) were observed upon the Wawmses.

Although the sea to-day most unfortunately prevented any serious work, from an ornithological point of view, being attempted, the following observations, made in the course of several visits to the islands during recent years, will suffice to bring up to date Mr Selby's notes upon the birds, as given in Mr Tate's paper already referred to.

Thanks to the protection now afforded by the Wild Birds' Protection Act, and to the meritorious efforts of the Association

which rents the islands for the purpose, the number of birds breeding on the islands has certainly not diminished during recent years; while several species, which had begun to grow scarce as breeding species, have now considerably increased.

The commoner Terns (*Sterna cantraca*, *S. fluviatilis*, and *S. macrura*) are probably about as numerous as ever, though they seem to be rather erratic breeders, and in some seasons have been reported to have almost entirely deserted their eggs when upon the point of hatching! A considerable destruction of their eggs is also sometimes caused by an unusually high tide covering parts of the beach on which they are laid, and on such an occasion the eggs may be found washed up in numbers amongst the "wrack" or sea-weed at high water mark. I have not for the last few years been able personally to identify any Roseate Terns (*S. dongalli*) nesting, but Mr Paynter informs me that a pair or two are generally still to be found. In the autumn I have observed small flocks of them fishing in the neighbourhood of the islands, but these are perhaps birds which have nested elsewhere, and are only passing on migration.

Of the Gulls, the Lesser Black-backed (*Larus fuscus*), the Herring Gull (*L. argentatus*), and the Kittiwake (*Rissa tridactyla*) are the only species which breed. The first named is one of the most numerous birds upon the islands, and is only kept within bounds by the watchers, who are instructed to take as many of its eggs as possible from the inner islands, where it is apt to destroy the eggs of the Eider Ducks and Terns. Its nests are, however, left unmolested upon the Wawmses, and some of the outer islands, and it is there that the bulk of the young birds are reared. A few pairs of Herring Gulls are always associated with the Black-backs; but, in spite of their vastly inferior numbers, I am inclined to think that they do more harm to the eggs of other birds than their more numerous relatives.

They seem ever to be on the watch for unguarded nests of the Eider Duck, and round the nest of a Herring Gull, which Mr Paynter and I took this year, on the rocks opposite to the Pinnacles, we found the remains of quite a number of Guillemot's eggs, which had been carried to the neighbourhood of the gull's nest and there devoured. The Kittiwake is still an abundant breeding species.

Puffins (*Fratercula arctica*) seem to have increased as much as any bird upon the islands during recent years, and flourishing colonies inhabit the burrows on the Wawmsee, Noxes, and Brownsman. The tops of the Pinnacles are as closely crowded as of yore by swarms of Guillemots (*Uria troile*), and as we watch an individual wing its way in from the sea, and, alighting upon the backs of its densely packed companions, proceed to elbow its way in amongst them, it is difficult to believe that each mother can recognise her own young one, or locate the exact spot where her own particular egg is lying amongst the crowd. Be that as it may however, the eggs are hatched, the young are reared, and nature is satisfied, and the pleasures of incubation do not seem to be in the least interfered with by any doubt arising in the parent's mind as to whether or not the egg she is sitting upon may really have been laid by herself. It is a thoroughly democratic and good-natured community upon which the eye rests, and save for an occasional open-mouthed demonstration that one is treading upon another's toes, or a little bickering, all is harmony amongst the serried ranks. A good many, more or less bridled birds, are always visible, but really good examples of the Ringed Guillemot are not very common upon the Farnes. Razor Bills (*Alca torda*) are rare in the breeding season, and do not often nest upon the islands. A pair of Black Guillemots (*Uria grylle*) frequented the neighbourhood of the Pinnacles up till nearly the end of May in the present year, but then disappeared. The nearest breeding station of this bird is at the Bass Rock,

but a few individuals may sometimes be met with about the Farnes in autumn or spring.

Cormorants (*Phalacrocorax cabro*) have increased decidedly, and the Shag, or Green Cormorant (*P. graculus*) seems also to be increasing. A pair, and sometimes two, have bred pretty regularly on the ledges round the Pinnacles of late years, and in the early autumn of 1898 I found quite a number of both young and adult birds about the islands, though it is improbable that more than one or two of these had been bred there.

Eider Ducks (*Somateria mollissima*) have certainly not diminished in numbers, and the fearlessness of some of the ducks upon their nests is as surprising as ever. It is not very unusual for some of them to allow themselves to be actually touched without leaving their eggs; while an old duck will often, when disturbed from her nest, only waddle away from you a few paces and return as soon as you have retired again to a short distance.

Oystercatchers (*Hæmatopus ostralegus*) and Ringed Plovers (*Ægialitis hiaticola*) nest in small numbers on several of the islands, and members had the satisfaction of seeing a nest of each of them upon the Wideopens, on the occasion of our visit. The Rock Pipit (*Anthus obscurus*) is another bird which makes the islands its home, and is fairly numerous. In July 1898 we found a nest, which still contained eggs, in the wall of one of the ruined buildings near St. Cuthbert's Chapel.

Amongst birds which may be seen with considerable regularity upon the islands during summer, but which have not been known to nest there, may be mentioned the Turnstone (*Streptilas interpres*), Dunlin (*Tringa alpina*), and Purple Sandpiper (*T. striata*), while I have seen Grey Plovers (*Squatarola helvetica*) there, in full breeding plumage, late in the spring. Early in the present season the watchers reported that a King Eider Drake (*Somateria spectabilis*) had

appeared, but he did not stay for more than a week or two. Specimens of this fine northern species have more than once been killed in the vicinity of the islands.

But I have already digressed at too great length, and must return to ourselves. It was a keen disappointment to many of the party, who had good "sea legs," not to be able to visit more of the islands; but after steaming past the Pinnacles, and standing some way on our course to the Crumstone—where it was hoped that a view of the Seals (*Halicherus gryphus*), which make that lonely rock their home, might have been obtained—compassion for those who were *not* enjoying themselves prevailed, and the order was reluctantly given to 'bout ship and run for home. As a consequence of thus not completing our programme, we arrived off the mouth of the Tweed considerably sooner than had been anticipated, and the boats that had been chartered to come off to take us ashore were not in readiness. The state of the tide would not allow the good ship "Empress of India" to enter the river, and there was therefore nothing for it but to cast anchor, and, by blowing the syren, endeavour to attract the attention of our boatmen to the fact that we had returned and were ready for them to take us ashore. It was weary work this waiting, and a very long hour had passed before the last of the party had been safely landed upon the pier, and long before our release from "the trough of the sea" could be effected, there were few of us who had not had enough of it, and who from the bottom of our hearts were not disposed to agree with the lines of the *Aphorism of Enayna*, that

"He who goes to sea for pleasure
Will find comfort in Gehenna."

SELKIRK.—By the President.

THE FOURTH MEETING of the year was held at Selkirk, on Wednesday, 19th July, when the following gentlemen were present:—Mr James Smail, F.S.A. (Scot.), President; Rev. George Gunn, Secretary; Dr Stuart, Chirnside; Sir George Douglas, Springwood Park; Mr Thomas Craig-Brown and Miss Craig-Brown, Selkirk; Mr Alex. F. Roberts, Provost of Selkirk; Mr William B. Boyd, Faldonside; Mr C. H. Scott Plummer, Sunderland Hall; Rev. Dr Paul, Edinburgh; Mr G. G. Butler, Ewart Park; Major-General Boswell, Darnlee; Mr John Ferguson, F.S.A. (Scot.), Duns; Herr Johannes Albe, Duns; Mr Thomas Smail, Jedburgh; Mr Kenneth Cochrane, Galashiels; Mr Charles Rea, Oleithaugh; Mr James A. Somervail, Broomdykes; Mr John Turnbull, Galashiels; Professor Pringle Pattison; Mr Alison; Captain Vane; Miss Lorimer, Farnham; and Professor Fraser.

Leaving the Station Hotel at the early hour of 9-30, the drive was to the site of the old Castle of Selkirk, where Mr Craig-Brown favoured the company by reading the short paper which is printed *in extenso* in Appendix I. to this Report. He also led a section of the company over the large and well-defined Camp on Bell Hill, a little to the left of the road leading to Clarilaw. A drawing, with full description of this Camp, is given by our fellow member, Dr Christison, in a paper on "The Forts of Selkirk, the Gala Water, the Southern Slopes of the Lammermoors, and the North of Roxburgh," published in the Proceedings of

the Society of Antiquaries of Scotland for 1895, a paper which may be consulted with advantage. Mr Craig-Brown remarked that the Camp was mentioned in an Act of Parliament as the "Pickwork," which he suggested might account for the name of "Pickwork ditch" sometimes given to the Catrail.

By the courtesy of Professor Pringle Pattison, the policies of the Haining were thrown open to the Club, and the grounds and exquisite bits of scenery were much admired. An eyesore to some of the party was the somewhat muddy-looking water of the lake, occasioned by the presence of a minute species of *Alga*, which is referred to by Dr Paul in Appendix II.

The party next proceeded, by Hartwoodburn Meadow, to the Lang Moss near Clarilaw Moor, where, as well as on Whitmuirhall Moss, some good botanical work was done, under the guidance of Mr Boyd. A notice of the chief plants found is given by Dr Paul in Appendix II. to this Report.

On the return to Selkirk, a most instructive and enjoyable day was brought to a conclusion by the usual dinner at the Station Hotel.

Mr D. Carnegie Alexander, Thirladean, supplied the Secretary with a long and interesting list of birds observed in Selkirkshire, from which we find that the Raven is still found breeding on Meggat Water, and is not unfrequently seen. An Osprey was seen in Ettrick in 1899, and Mr Scott Anderson has a specimen stuffed, which was killed close to the Shaws. Merlins have been known to nest at Yair, and such rarities as the Red-legged Hobby and the Kite are reported to have been seen. The Rough-legged Buzzard, as might be expected, occasionally visits the district in winter. The Barn Owl is not unknown, and at the time of the Vole-plague the Short-eared Owl became quite common. A Great Grey Shrike was seen at the Haining during the present year,

and others have been recorded from Hangingshaw and other places in the county. Bramblings are frequent in winter, and an occasional Goldfinch has been seen on Tweedside. The Ring Ouzel is common, and breeds amongst the hills. Garden Warblers and Blackcaps are both summer visitors, the latter being the most numerous, and Mr Alexander has seen the Yellow Wagtail at General's Bridge, on the Yarrow. Siskins and Pied Flycatchers have been noticed from time to time. The Stock Dove is still uncommon enough to make the records of one seen at Peelburn and two at Ettrick Bank worth mentioning. Crossbills and Waxwings have been seen at Borthwick Brae and the Haining. Spotted Crakes have been killed in more than one locality, and Coots are common, breeding on Potloch and other places. The Dotterel still continues to visit Ettrick and Shaws, but is seldom seen now. The Dunlin has been known to nest at Whitehillshiel. Oystercatchers are frequent spring and autumn visitors, but do not stay, and Mr Scott Anderson has seen the Greenshank at the Shaws Loch. The same sheet of water has been visited by Bewick's Swans, one killed there being preserved at the Shaws, and the Golden Eye, Pochard, Sheld-Drake, Shoveller, Wigeon, Scaup, and Tufted Duck are all occasional visitors, the last-named remaining to breed at Faldonside, on a small loch belonging to Mr Boyd. A single specimen of the Pintail was killed by the keeper on the Haining loch. Brent Geese have been shot more than once, and a Smew was got at Bowhill some years ago. Mr Anderson once had in his possession a Garganey, killed at Oakwood Mill burn. A Little Grebe is occasionally seen; two or three Storm Petrels, and one Fork-tailed Petrel, have been picked up about the town of Selkirk, and amongst other erratic visitors may be included a Puffin, a Tern, and an occasional Great Northern, and Red-throated Diver. A Kittiwake is said to have been once blown so far out of its accustomed haunts as to have been shot at Selkirk cauld,

and the lochs and mires, especially about the irrigation works, are often visited by Gulls, including even that noble bird the Great Black-backed Gull.*

APPENDIX I.

*On Selkirk Old Castle.—By T. Craig-Brown,
F.S.A. (Scot.)*

The first recorded mention of Selkirk is in a charter of David I., who, about 1110-1120, some years before he ascended the throne, founded an abbey at Selkirk, endowing it with extensive lands and valuable privileges. In that charter Earl David speaks of the old town, of his castle, and of a previously existing church—doubtless the church which gave its name to the original settlement—Scheleschyrohe, or the kirk of the Shiels. Shiel or shieling (in monk Latin, *scalenga*) was the name given to a hut or house erected within the precincts of a forest, sometimes coupled with certain rights of pasturage. Although there is no certainty, the wrong presumption is that the primitive church occupied the same site as the ruined building in the churchyard, not far from where they stood. When David became king, he transferred the monks from Selkirk to Kelso, and with them the endowments. Tacked on to the end of the charter of removal there was a curious clause which provided that the abbots of Kelso should be chaplains of the king and his successors at “the aforesaid church,” meaning probably the church of Selkirk. It may be noted that up till the time

* It would be very desirable if details of the occurrence of some of the rarer birds, above mentioned, could be furnished; without full verification, casual references to such rarities as the Kite, Red-legged Hobby, and Garganey, lose half their value.—G.B.

of the Reformation we read of priests who had the double vicarage of Selkirk and Auld Roxburgh.

Although for the next century and a half there is no specific mention of Selkirk Castle, there is record of several courts or parliaments held at Selkirk by the king, from which we may safely conclude that the royal residence continued to exist. Strangely enough, it is to English documents we are indebted for nearly all further information. In 1300 Sir Aylmer de Valence was declared responsible to Edward I. for provisioning the Castle of Selkirk, and next year an English army of several thousands received its pay at Selkirk, after having been reviewed at Midlem. A silver penny of Edward I., found not long ago in a garden, may have been part of this army's pay, spent on the spot, as the way of soldiers is.

Early in 1302 Edward I., then at Roxburgh, appointed Sir Alex. de Balliol and Sir Robert Hastang to superintend the work for erecting the fortress of Selkirk; and so rapidly was it pushed forward that by September the following report was sent to the king:—"The Tower of the Fortress of Selkirk is finished except the roof from default of plunk (probably *lead*); a postern is made out of same to the west, faced with stone; a drawbridge and portcullis with a good bretasche above, the stonework of said bridge being half finished. And 14 perches (77 yards) of pele are made from one part of the tower to the other, leaving 43 perches (236½ yards) of pele yet to make. The stonework of the chief gate of the fortress is raised above ground to the drawbridge." For provisioning this castle there were sent from Berwick:—"60 qurs wheat, 10 casks wine, 120 qrs malt, 160 qurs oats, 10 qurs salt, 20 qurs beans and pease, 20 crossbows, 5000 arrows, and 60 qurs sea-coal."

All these preparations, however, appear to have been of little avail, for early in 1304 we find Balliol receiving King Edward's pardon for the loss of the pele of Selkirk, for

which he was responsible under forfeiture of body, lands, goods, and chattels. It is highly significant that at this very time Wallace had returned from France, and that there is evidence of the Scots hero being in the south of Scotland. In 1306, the year after Wallace's betrayal and execution, Aylmer de Valence, afterwards Earl of Pembroke, got a gift of Selkirk Castle with the forest lands; and four years later we find the English king staying several days at the Castle, busy with the subjugation of his new and unwilling subjects. After Bannockburn the Castle passed, with the office of Constable of Selkirk, into the hands of Turnbull of Philiphaugh, a stout soldier of Robert the Bruce. From them it passed to their kinsmen, the Murrays, and finally into the possession of burgh families of Selkirk, under the name of "The Auld Peel." The street which led up to it from the Kirk Wynd used to be called the Peel Gait, until certain unreflecting authorities had it Englished into Castle Street.

Haining is not an uncommon name in Scotland, Acts having been passed from 1535 to 1617 ordering the formation, or prohibiting the destruction, of plantations and haynings. The name of this estate occurs, however, at a much earlier period, and there is room for believing that it may have been the "hanit part" of the ancient forest referred to in the Forest Laws of William the Lion. The new part of the present house was built about 100 years ago of the stone of the district; but one of the Pringle lairds, who had been military attaché abroad, brought home an Italian architect who faced the front and back with freestone, and added many features of Italian architecture. Further on we shall see a very elegant span over a burn, still known as the Italian bridge. As regards the loch, now so much discoloured, a singular fact, which may have some connection with the discolouration, is that in 1661 the Mayor of Berwick raised an action against the Laird of Haining

for damage to the salmon fisheries, the river having been poisoned by the loch being drained into it.*

Before leaving the estate the Club will pass close to Hartwoodburn, a forest steading mentioned in the list of those forfeited by the Earl of Douglas to the Crown in 1455. It is interesting to note how many names recall the pastime of the chase in olden times—Hartwood, Huntlee, Hindhope, Buckeleuch, etc.; and many a gallant and royal company has no doubt started from the Castle, on the site of which we are now standing,

“When the mavis and merle were singing
When the deer swept by, and the hounds were in cry,
And the hunter’s horn was ringing.”

APPENDIX II.

*Botanical Notes on the Selkirk Meeting.—By the
Rev. David Paul, LL.D.*

In the Lang Moss on Clarilaw Moor, which was first visited by the Club, the only plants of special interest found were *Cicuta virosa* Linn., *Ranunculus Lingua* Linn., *Carex teretiuscula* Good., and *Carex filiformis* Linn. The last was found in considerable abundance, and more of it was in flower than is usually the case. In the Murder Moss these two Sedges were also found, along with *C. disticha* Huds. Search was made there for *Potamogeton plantagineus* Ducros, and *Utricularia intermedia* Hayne, but unsuccessfully, owing to the wet state of the bog. Both these plants are said to

* I well recollect that, in 1846, when walking round the loch, my attention was arrested by several trout, in a dying condition, gathered round the mouth of a very small runner which entered the loch, as though they were seeking fresh water.—J.S.

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have been found there. In Whitmuirhall Bog there was abundance of *Scirpus lacustris* Linn., and *Phragmitis communis* Trin., and a few plants were found, in seed, of the rare *Corallorhiza innata* R.Br. This interesting plant was discovered there, in June 1895, by Dr Muir of Selkirk, and the discovery was communicated at the time by Dr Farquharson in a letter to Dr Hardy, published in the Proceedings of the Club for that year, p. 363. It occurs in two other localities within the limits of the Club's sphere of investigation. Mr William Shaw found it in July 1866, "in a wood on the roadside between Alemill and Whitfield," in the east of Berwickshire.—(See interesting notes on the plant by Dr Hardy in the Proceedings for 1866, p. 278.) The other locality for it is Newham Bog, in Northumberland, where it has been several times found.—(Proceedings, 1896, p. 44.)

The only other matter of botanical interest which the Club took note of was the curious confervoid plant which discolours the water of Haining Loch, and forms a dirty scum on its surface during the summer months. It has been observed there for about eighty years, and it does not seem to occur in any other loch in the district. Greville referred it to Agardh's genus *Lyngbya*, and gave to it the specific name *prolifera*. It is nearly allied to *Calothrix*. He describes it thus:—"Plant extensively diffused, forming a floating scum of a rich purple colour. Filaments extremely slender, entangled, somewhat rigid, yet flexible, entirely destitute of attachment, and free from any mucous layer. Annuli, from the minuteness of the filament, almost inconspicuous."—(Grev. Scot. Crypt. Flora, vi., 303. See also Hooker's English Flora, Vol. v., Part i., p. 370.) The plant deserves more careful study.

NEWTOWN ST. BOSWELLS, RINGLEY HALL, THE LAW, MAKERSTOUN, LITTLEDEAN TOWER, AND MAXTON.—By
J. Ferguson, F.S.A. (Scot.), Duns.

THE FIFTH MEETING of the season was held at Newtown St. Boswells, on Wednesday, 23rd August, the object being to visit some of the places of interest on Tweedside between St. Boswells and Makerstoun. The weather was superb, and a goodly number of members and friends assembled on the arrival of the morning trains. The excursion was under the guidance of the Rev. M. H. N. Graham, minister of Maxton, and Mr Ralph Richardson, F.R.S.E., F.S.A. (Scot.), Gattonside House, both of whom had previously rendered a like service to the Club in this neighbourhood. Carriages were in waiting outside the Railway Station, and a start was made about 11 a.m. for

RINGLEY HALL,

an old fortification or mote situated on the Tweed opposite Makerstoun House, and

THE LAW,

a moot-hill about half-a-mile farther down the river. The drive was one of extreme beauty and interest, passing through one of the fairest parts of the Border, where History and Romance have left their imprints on every side, and each step marks the scene of some event enshrined in song or story. Behind were the triple Eildons, on the slopes of which was born the Border Muse; in the distance, in front, loomed Lilliard's Edge, where were avenged the cruelties and ravages of the lieutenants of Henry VIII.; while close at hand flowed the classic river, enfolding in its embrace Dryburgh and its deep

veil of foliage, beneath which the great wizard, "in the midst of the land he has made enchanted," sleeps his last long sleep. St. Boswells Green and Maxton House were quickly passed, and then the ancient cross which marks the spot where once stood the market place of Maxton came into view. The base and shaft of the cross are apparently original, and lately, by the exertions of the Rev. Mr Graham, the upper part has been restored. On arriving at Ringley Hall, the party dismounted and examined the structure. Mr Richardson had kindly provided a number of printed copies of his description of Ringley and the neighbouring moot-hill for the use of the members, and it is unnecessary to do more than quote his account of both.

"According to Alex. Jeffrey's 'Roxburghshire' (Edin., 1859, Vol. III., p. 162), the remarkable structure known as 'Ringley Hall' is an ancient British fort. He derives the name from *Rhin*, a point, and *ley*, a fortified place; but, whatever its original appellation was, the modern name may have been popularly bestowed upon it from the three concentric rings surrounding the fort. Jeffrey gives as an illustration a 'Bird's-eye view of Ringley Hall taken in 1776,' which is a thoroughly untrustworthy representation of the fort, as it furnishes no idea of the wide extent of ground covered by Ringley Hall.

"By aneroid, I ascertained that the highest point of the fort is fifty feet above the ground outside its outer rampart. The fort occupies the summit of a headland, composed of porphyrite, rising abruptly from the right bank of the Tweed, but it is completely obscured by trees from persons passing quite close to it on the Kelso road. Consequently, Ringley Hall is little known and seldom visited.

"On measuring the area of Ringley Hall, I found that its dimensions were approximately as follows:—

Diameter of fort next Tweed	...	...	60 Yards.
Circumference of first or inner rampart	...	...	145 "
Circumference of remains of second or middle rampart	...	...	128 "
Circumference of remains of third or outer rampart	...	...	145 "

The two latter ramparts are cut, and large portions are obliterated, by a cultivated field, and by the Kelso road, which is here 236 feet above sea level.

“Dr Christison makes very slight reference to Ringley Hall in his ‘Early Fortifications in Scotland’ (Edin., 1898), but considers it a *Mote* or fortress; while Sir George Douglas, in his ‘History of the Border Counties’ (Edin., 1899), says the terrace-work or terraced fortification on the landward side of Ringley Hall serves to ally it to the *motes* or fortresses defended by palisades. Dr Christison points out that there is an essential difference between a *mote* or fortress and a *mute hill* or meeting-place. It is interesting to find, in such close proximity, instances of both a *Mote* like Ringley Hall and a *Mute hill* like The Law, which is a short distance to the east.

“The story goes that, during one of the incessant Border wars, the English held Ringley Hall, whilst the Scots concealed themselves on the opposite side of the Tweed, in a place subsequently called ‘The Scots’ Hole.’ The English being superior in numbers, resolved to attack the Scots by fording the Tweed at a ford some 500 yards above Ringley Hall; but whilst they were in the act of fording, the Scots sallied from their ‘Hole’ and utterly defeated them. Hence the old Scottish pun that the English learned to ‘Rue-the-ford’ of Rutherford, a place-name (formerly spelt Ruderfurde) derived from ancient terms for *red*, and perhaps from the Old Red Sandstones there.

“The Mutehill or Moothill, termed ‘The Law,’ is about half-a-mile down the Tweed from Ringley Hall, and also on the right bank of the river directly opposite Makerstoun House. It is an isolated conical mound, which I found, by aneroid, rises about seventy feet above the adjoining ground. Here, as in the days of the Anglo-Saxon *Witena-gemót*, or ‘meeting of wise men,’ the village elders assembled. Such Mutehills are common in Scotland, and the term occurs in such place-names as Muthill, Mutilaw, Mutelaw, Muttounbray, and Muttonhole, an instance of the last being quite near, in Maxton parish. The Law is also called ‘The Plea Hill,’ pointing to one of its original uses as a *forum commune*.”

Sir George Douglas has suggested that the fort now known as Ringley Hall may have been created by the early inhabitants of the district to act as a curb on the advance of the Anglian invaders of Northumbria under Ida, about the middle of the sixth century. The supposition is a plausible one, but nothing in the shape of evidence has yet been adduced in support of it. As bearing on the name "Plea Hill" applied to The Law, Mr Laing, Hawick, calls attention to the significant circumstance that in the vicinity of the well-known moat at Hawick there is a part of the town called "Playlaw," which may be a corruption of "Plealaw." It would be interesting to know whether similar names occur in the neighbourhood of other moots, and it is hoped that some of our members may follow out the line of investigation here suggested.

Leaving the Law the company clambered down the river bank and crossed by ferry-boat to

MAKERSTOUN HOUSE,

which, with its beautiful surroundings, was next inspected. The mansion, which occupies a commanding situation, is of considerable antiquity. It was destroyed in the English raids of 1545, was rebuilt about 1590 by Thomas Makdougall, and has been added to and improved in more recent times. Its late owner, Sir Thomas Makdougall Brisbane, who married the heiress of the estate, was a well-known soldier and man of science, and a President of the Royal Society of Edinburgh. It is from him that the capital of Queensland, Brisbane, takes its name. In the hall are displayed some fine coloured prints of Border Abbeys, bearing the date 1813. The picture gallery contains some interesting pictures, the most important being the original portrait of "Beardie," Sir Walter Scott's grandfather, who is thus referred to by his illustrious grandson:—

"And this my Christmas still I hold
Where my great-grandsire came of old;
With amber beard and flaxen hair,
And reverend apostolic air—
The feast and holy-tide to share,

And mix sobriety with wine,
And honest mirth with thoughts divine.
Small thought was his, in after time,
E'er to be hitched into a rhyme.
The simple sire could only boast
That he was loyal to his coat;
The banish'd race of kings revered,
And lost his land—but kept his beard."

Marmion, Introduction to Canto vi.

The members then visited the old churchyard now almost hidden by a cluster of spreading yews. It lies close to the mansion house, and is the only remain of the village of Makerstoun, to which a statistical return of 1649 (published in our Transactions of 1895, p. 350) refers, saying that "the kirk stands in the midst of the town, which is the greatest part of the parish." In the records of the Presbytery of Kelso there is, under the date 5th August 1668, a notice of the visitation of the parish, when the minister complains that "the kirk and queir [nave and chancel] are ruinous, neither watertight without, nor planted with seats commodiously within." There is also a list of the heritors at that date. They are Henry McDougall of Makerstoun; William McDougall, portioner thereof; Arthur Holywill of Atrick Medows; Thomas McDougall of Stodrig; and William Glaidstaines of Abbothill. Another notice, of 3rd August 1720, may be assumed to refer to the same building, for however roughly the Pre-Reformation Churches were then treated, the time for pulling them down, and replacing them by the rectangular shelters of which we are now slowly getting rid, had not yet come. A claim had been made for seats by two heritors, Thomas Macdougall of Stodrig and Walter Pearson of Charterhouse. "The Presbytery found by conversing with the heritors that there was no entry to the isle [probably the chancel] but by the church door, that the isle was not separated from the church by any rail or seat in the mouth of the isle till about five years ago, and that Stodrig, as he said for his own convenience, made a door in the gavel of the isle, and built a seat in the arch of the isle. Stodrig protested that the isle was not to be measured since it was no part of the church, but his own

property." The whole building was measured, however, and it was found that the kirk was 36 feet long by 19 feet 9 inches broad; the isle 17 feet 10 inches long by 14 feet 10 inches broad; the breadth of the arch 3 feet 1½ inches, and its length 10 feet 6 inches. A mausoleum still stands in the churchyard, apparently of modern construction; at least it is not easy to connect it with the dimensions given above. The northern wall seems older than the rest, and may be either a fragment of the nave or the north wall of the chancel. On 3rd March 1807, the Presbytery sanctioned the removal of church, manse, offices, with garden and glebe, to "a more central site" at some distance. It is not unlikely that the stones of the ancient church were used as material for the new erections. (Rev. Dr Leishman's Notes.)

The present occupant of Makerstoun House, Mr Harrison Cripp, F.R.C.S., most kindly entertained the party to luncheon. Before leaving, Mr Cripp's hospitality was suitably acknowledged by the President.

The splendid trees in the policies of Makerstoun House are worthy of notice. A Beech, evidently of great age, measures 17 feet 6 inches in girth at the base, and there are many others almost as fine.

Recrossing the river, the company once more entered their carriages and proceeded back to

LITTLEDEAN TOWER,

which was reached about mid-afternoon. The Rev. Mr Graham read a most interesting historical account of the fine old ruin, which he has kindly permitted us to insert in this Report.

"This is a very old Border Peel, the favourite residence of a famous and redoubtable family, the Kers of Cessford, who also possessed the extensive property of Nenthorn, in Berwickshire. The building—now so grievously wrecked, thanks to the invasions of barbarous onslaughts, *not* of dare-devil foes, but of pick and shovel and gunpowder, to provide material for the erection of stables and the repairing

of worn-out roads—this Tower, I say, was of great extent and of enormous strength. It was said by the officials of the last Government Survey to be the finest specimen of a Border Peel in their large experience. ‘Portions of it’—I quote from ‘Notes on Maxton’ in our Transactions—‘are, as usual, of different dates, the earliest probably of the first half of the 14th century, and the most recent 200 years later. It was of an unusually large scale, for the plough now reveals that it covered a wide surrounding area. In shape it was a half-moon on the western, and an oblong square on the eastern side, while on the south side it appears to have jutted out considerably beyond the *western* oval tower, for some of its foundations in this direction were taken up not many years ago.’ It will be observed that there are three tiers of loop-holes—an uncommon number—and so placed as to command every approach. On the topmost battlement there ran all round a bartizan, 3 feet high, portions of which may still be seen.

“It will also be noticed how Nature has lent her own charms in a bit of exquisite scenery amid which to rear a mansion; and how also, with the river on the north side and a deep steep dell on the east side, sources of offence and defence, very rarely combined, were thus furnished to the fortunate inmates. With walls so thick, and loop-holes so skilfully placed, and these natural advantages, the Kers could slumber in peaceful security.

“The thrilling incidents, not always very creditable, of the Border feuds and raids are too well-known and threadbare to patch together now; but sooth to say, no more valiant, or aggressive, or skilful cattle lifters ever haunted or hunted hill and dale, with delicious disregard to *meum* and *tuum*, than these grand old gentlemen of Cessford and Littledean. It was their nature to, and they gave ready response to their excursive instincts.

“The most noted, perhaps, of these worthies, who now rest from their labours (predatory and otherwise), departed this life in a curiously tragic form close by these mouldering walls. He had a favourite bull, celebrated for its beauty, which the old gentleman was fond of showing to his guests. Clothing himself in a red dressing gown, he led it from its

stall, as often before. Alas! it did not know its owner in his hateful unwonted garment. It gored him to death, and from that day (date not known) this much-loved home was deserted, and the family migrated to Nenthorn, where 'no strife should rage, nor hostile feuds disturb their peaceful years.' As an instance how striking events are retained in memorial perpetuity, I found on coming to Maxton, some 35 years ago, that the village children used to scare each other in the gloaming by crying out, 'There's the Little-dean bull,' and on enquiry I was told the tradition I have related.

"The last of the race of the Kers was the gallant old general who contested the dukedom of Roxburghe and the estates so fatally in 1812. Dear, kind-hearted, headstrong soul! He refused the offer of £100,000 for his chance, and even declined the proposal that the successful claimant should pay his rival's expenses. The suit was tried in the House of Lords, and by the casting vote of the Chancellor it resulted in favour of the present family. The general died in 1833, and sleeps among his forbears in a vault in Maxton Churchyard—a worn-out, heart-broken, fine old soldier. We shall see his memorial tablet if we visit the church, placed there by revering, distant relatives a few years ago."

After Mr Graham had read his paper, the Secretary recited a curious legend connected with the Tower, taken from Henderson's "Folk Lore of the Northern Counties." It was to the effect that the Tower was at one time haunted by the spirit of an old lady—once its mistress—who had amassed so much money by extortion that she could not rest in her grave. Ultimately she appeared to a servant of her successor, to whom she revealed its hiding place, and directed that it should be divided between the laird and his family, the servant, and the parishioners of Maxton.

A full account of Littledean Tower, with views of the structure in its present ruined state, will be found in McGibbon & Ross's "Domestic and Castellated Architecture of Scotland," Vol. III., p. 351.

From this point the party drove back direct to Newtown, time not permitting a visit to Maxton Parish Church, which

it had been hoped might be undertaken. Mr Graham's Notes on the Church, as well as Mr Richardson's Geological Notes on the district embraced in the day's excursion—both of which were read after tea in the Station Hotel at Newtown—will be found in the Appendices to this Report. The thanks of the Club were tendered to both gentlemen by the President, for the invaluable services they had rendered in connection with the day's proceedings.

The following members and friends were present at tea, or in the course of the day:—Mr James Smail, President; Miss Merlin Milly Smail and Mr Elliot R. Smail, Edinburgh (guests); Rev. George Gunn, Secretary; Captain Norman, Berwick; Mr A. H. Evans, Cambridge; Master J. H. Evans (guest); Mr W. T. Hindmarsh, Alnwick; Dr J. A. Voelcker, London; Captain Forbes, Berwick; Dr Stuart, Chirnside; Mr John W. Quin, Galashiels; Mr John Turnbull, Royal Bank, Galashiels; Mr B. Morton, Sunderland; Professor J. C. A. Steggall, Dundee (guest); Rev. John Walker, Whalton Rectory; Mr M. le N. Fleming Struthers (guest); Rev. J. F. Leishman, Kelso; Dr Hunter, Galashiels; Professor A. S. Pringle Pattison, The Haining, Selkirk (guest); Mr T. Craig Brown, Selkirk; Dr Stevenson Macadam and Miss Stevenson Macadam (guest), Edinburgh; Mr Arthur Giles, Edinburgh; Mr J. A. Ferres, Edinburgh (guest); Rev. M. H. N. Graham, Maxton; Mr John Cochrane, Hilton Bush; Mr Walter Cochrane, Lynhurst (guest); Dr Hunter (guest); Mr Kenneth Cochrane, New Fann; Rev. J. G. Napier (guest); Sir George Douglas, Springwood Park; Mr Francis Lynn, Galashiels; Rev. Ambrose Jones, Stannington; Mr John Cuthbert Hume (guest); Mr and Mrs George G. Butler, Ewart Park; Mr and Mrs E. C. Goldberg (guests); Mr W. Maddan, Berwick; Dr D. F. S. Cahill, Berwick; Mr J. Lindsay Hilson, Jedburgh; Rev. Thomas Martin, Lauder; Mr Ralph Richardson, Gattonside House; Dr Stewart Stirling, Edinburgh; Rev. Dr Leishman, Linton; Mr H. Rutherford, Fairnington; Mr A. M. Dunlop, Ashkirk; Mr F. E. Rutherford, Hawick; Mr Stephenson, Chapel (3 sons); Mr D. McB. Watson, Hawick; Rev. Joseph Hunter, Cockburnspath; Mr and Mrs Henry Paton, Edinburgh; Mr George Fortune, Duns; and Rev. W. D. Herald, Duns.

APPENDIX I.

Maxton Church.—By Rev. M. H. N. Graham.

This church, or rather this venerable fragment of a large edifice, is designated in our circular "Pre-Reformation." That may mean anything in relation to years. The Reformation period is a baby time in our case, for the church was erected many centuries prior to John Knox and his iconoclastic confreres.

It is said to be as old as the Heptarchy, which everybody knows prevailed during the 8th century. It has passed through many transformations during these 11 centuries. It was thatched with broom as late as 1793. One precious gem at least remains, the fine Norman door at the west end. There are also a few scroll stones of unknown age stuck apparently at random into the western gable. In common with many others, Maxton Kirk was attached to Dryburgh, and was dedicated to that popular godfather, Saint Cuthbert.

It must have been, as I have said, a comparatively large edifice, for Maxton was a village of some 5000 souls—the population is now about 464—and as there was then no U.P. or Free Church to draw away the population, the worshippers would swarm beyond our present limited walls. The building must have had some architectural pretensions, for I possess what is believed to have been the capital of a Corinthian pillar, which was found embedded among rubbish about half-way down our north aisle, which aisle was built on my advent in 1866. Among other hallowed relics there are interred beneath the pulpit the rough, undressed stones which formed its stairway, trod for rude ages by my predecessors—*Si monumentum requiris circumspice!* Yes, but I regret I cannot gratify that curiosity unless I remove the pulpit, but, believe me, these uncouth *monumenta* are in safe and friendly custody.

One of my predecessors was the eminent Gabriel Wilson, who, with the more eminent Thomas Boston, was one of the martyr Marrow heretics in a poor *fiasco* theological controversy, which you will pardon me for not discussing. Another of my predecessors lost his head and his living amid the mazes of a millennial craze. His latest successor still retains both.

One of our treasures is the bell slung in a comparatively old belfry. It bears the inscription: "1609, Soli Deo Gloria Joan Burgensis me fecit"—nigh 300 years ago. I claim for it that, for power and tone, it is the finest country church bell I have heard, and that is not saying little. Proudly would my venerable bellringer have tolled his idol to-day, but Charles has gone where all good beadles go.

In lifting the lobby floor that runs east and west, we disinterred a number of human bones, afterwards of course preserved elsewhere. Who would have the right of sepulture there other than the heritors? Perhaps some of the heroes of Ancrum Moor, who fought in 1545, were thus honoured. If so, I hope our own "fair maid Lilliard" also had this homage paid to her (brave lass!) stumps and all!

There are two inscriptions, both sacred, on spiral stones, one in Hebrew on the south wall, and one in Latin above the north window. I will translate them for my clerical companions. *Hebrew*—Psalm LXXXIX. 15:—"Blessed are the people that know the joyful sound, Selah." 1724—Psalm xcv. 7:—"O come let us worship and bow down." This was during Gabriel Wilson's ministry. *Latin*—"Jesus only is our safety." How it came there originally I know not. To my ever generous heritors I owe the addition of the north aisle and the renovation of the interior, as well as the three harmonious large windows, which I do not despair of filling in with commemorative Scripture pieces.

We have a few interesting tombstones, singularly devoid, however, of graveyard humour, which time and weather and thoughtless pedestrians have grievously obliterated. I have, of course, had careful copies made long ago. So far as we can decipher, the oldest is of date 1642.

Communion tokens have now become a thing of the past, and therefore of much interest. Our earliest bear date 1700. I possess only *one*. [N.B.—Importunate collectors take note.] The communion cups were a gift last year from Miss Thomson, daughter of my predecessor, whose incumbency lasted 54 years. Incidentally and modestly let me tell that we were the very first in the county to introduce instrumental music, and that as far back as 1873—a bold, but never regretted, innovation.

APPENDIX II.

*Notes by Mr Ralph Richardson, F.R.S.E., F.S.A. (Scot.),
Gattonside House, on the Geological Phenomena
observed during the Club's Excursion,
on 23rd August 1899.*

(1) RIVER TERRACES.—In the map of the Geological Survey (Kelso, Sheet 25) the valley of the Tweed from Dryburgh down to Makerstoun is distinguished by no fewer than four river terraces. The oldest of these stretches along the south bank of the river from opposite Dryburgh, and curving southwards by Greycrook (170 feet) to Mainhill and Hiltonshill (100 feet), passes to the south and east of Maxton (50 feet.) Another ancient terrace runs from near Ploughlands (50 feet) to Rutherford Mill. The more recent terraces occupy the haughland of the Tweed above and below Dryburgh. As I have ascertained by aneroid, the more ancient terraces occasionally rise between one and two hundred feet above the river, and show at how much higher a level it once flowed than it does at present. When the Tweed flowed at the level of the oldest terrace, the spur on which Lessudden (St. Boswells) now stands was, on its north-east and south sides, washed by the waters of the Tweed now in some places half a mile distant.*

There is no ground, however, for supposing that a lake occurred here, or is evidenced by such terraces, for, besides other reasons, they appear at intervals along the Tweed and all rivers. Thus, an ancient terrace stretched from Allerly and Gattonside (175 feet) to the Pavilion on the north bank of the Tweed; and from Huntly Burn (150 feet) past Abbotsford to Faldonside (50 feet) on the south bank; whilst another old terrace stretched from the south side of Gala-shiels round the Rink Hill (125 feet) to the heights above Fernielee (125 feet); and another formed the opposite bank at Raelees Yair (70 feet) and Sunderland Hall.†

* See Geological Notes by Mr Richardson in the Club's Proceedings for 1896, p. 38.

† Heights of terraces, by aneroid, above present normal level of the Tweed.

(2) **SEDIMENTARY ROCKS.**—East of Newtown St. Boswells, such rocks belong to the Upper Old Red Sandstone series, as testified by the discovery in them of *Holoptychius nobilissimus* by the late Mr Charles W. Peach, in June 1873, as recorded by him at page 400 of the second volume of the Transactions of the Edinburgh Geological Society. Mr Peach found this characteristic Old Red fish in sandstones in the quarry on the Black Hill of Earlstoun, and observes:—"Similar sandstone beds occur on both sides of the Tweed near Dryburgh, and I have no doubt that, if quarried and closely searched, similar fish-remains would be found there. These rocks belong to the Old Red Sandstone." Mr Charles W. Peach was the father of that eminent member of the Scottish Geological Survey. Mr Benjamin N. Peach, who spent several years surveying the district comprised in sheet 25 (Kelso) published in December 1879.

I may add that fragments of a specimen of *Holoptychius nobilissimus* from the Black Hill of Earlstoun, perhaps Mr Charles Peach's specimen, are now in the Museum of Science and Art, Edinburgh.

A little to the west of Ringley Hall, a fault occurs which brings down Porphyrite, interbedded in Calcareous Sandstones, on the Upper Old Red Sandstones, and marks the eastern boundary of the latter. The Tweed has cut its way through the Porphyritic barrier extending from Ringley Hall to the Trows ferry; but, about 1797, Sir Henry Hay Makdougall of Makerstoun caused rocks in midstream below Makerstoun to be blown up, and thus afforded a better passage for the river.

(3) **IGNEOUS ROCKS.**—According to Mr Benjamin Peach, Trachytic Igneous Rocks welled up through the Old Red Sandstones of this district, and formed a more or less horizontal belt, the denuded remains of which now cap the hills and give them their distinctive features. (Address to the Scottish Natural History Society's Field Meeting, at Melrose, 23rd April 1898.) The great volcanic vent of the Eildon Hills, with its solidified ash, now used as building stone; similar volcanic Agglomerate, indicating volcanic vents at the Holmes, Ancrum Moor, and Down Law; the Basaltic Crags of Bemersyde, Maxton, and Craigover; with

the vast expanse of Porphyrite extending northwards and eastwards of the fault already mentioned—all attest the widespread igneous eruptions to which this locality had once been subject.

Whilst the denudation of the softer Sedimentary Strata laid bare the intrusive Felstone Micatrap forming the summits of the Eildons, the same agency exposed the Basaltic Hill known as Penielheugh, the Felstone Masses forming the White and Black Hills of Earlstoun, and the Porphyritic ridge crowned by Smailholm Tower. Indeed, but for the volcanic activity and denudation of the past, the frequent conjunction of crag and gorge, which imparts such romantic beauty to the scenery of this district, would not have existed at all. The geology of the Scottish Border has thus a direct connection with its literature and romance; for what, for instance, would such a district as this have been, in literature and historic annals, without its "Eildons three," its lofty Cowdenknowes, its rock-bound Bemersyde, its craggy Smailholm, its picturesque Makerstoun,—all distinctive features in the landscape, and products of those mysterious forces of Nature which have impressed upon the locality its present configuration, so renowned in Border legend, romance, and song?

SEATON DELAVAL, SAINT MARY'S ISLAND WITH ITS
LIGHTHOUSE, AND TYNEMOUTH.

THE SIXTH MEETING of the year was held on Thursday, 21st September, when over forty members and guests assembled at Seaton Delaval Station, on the Blyth and Tyne branch of the North Eastern Railway. The district selected had never before been visited by the Club, and is one very little known even to the Northumbrian members. Through the good offices of Canon Walker, permission had been obtained from Lord Hastings' agent to inspect Seaton Delaval Hall, with its adjuncts and grounds, in the fullest manner. The fine Norman domestic chapel adjacent to the hall, recently given to the Church of England by Lord Hastings, and now a parish church, was also thrown open; as was also the mausoleum (designed after a Greek temple) begun by the last Lord Delaval to entomb the remains of his only son, but never completed. The grounds have been embellished after the Italian style, with straight avenues of trees planted in 1717, by lofty obelisks, around which local tradition has gathered many ridiculous tales of the Delaval witch, and mythological figures of stone or plaster or lead. Mr Benjamin Morton, of the Trinity House service, and one of our members, who conducted the party, has furnished the following account of this part of the day's proceedings, and a still more full and valuable account of the lighthouse on St. Mary's or Bates' Island.

SEATON DELAVAL AND SAINT MARY'S ISLAND LIGHTHOUSE.—
By Benjamin Morton, Sunderland.

The district selected for the Club's excursion was one of very different scenery and surroundings to those in which it has been accustomed to meet, and although the landscape may fall short in beauty and variety to many scenes we have explored, yet it is of equal interest, and the deeds enacted here go as far back in English history as those which have occurred in the castles, towers, and localities, the field of the Club's previous visits.

Situated in the south-east corner of Northumberland, surrounded on the one side by collieries, and lying midway between the important ports of the Tyne and Blyth, the district is compensated, for its tame outline, by mineral wealth, which contributes so largely to the commercial prosperity of England.

Hamon de Laval, of the province of Maine,* one of the companions of the Conqueror who distinguished themselves in the subjugation of England, commenced the building of a castle at Seaton Delaval for his own protection and for that of the lands which had been granted to him in reward for his services.

The site of the ancient castle was a little to the south-west of the present structure, but its walls have been entirely razed, its ditches levelled, and nothing is left of the first abode of the family except the chapel. This venerable building is a pure and perfect specimen of Norman architecture, and seems, except in its roof, to have undergone very few alterations.† Above the west door, within and without, are six shields, charged with the arms‡ of the

* cf. Planché, *The Conqueror and his Companions*.

† For an architectural description of the chapel see *Notes on the Chapel of Our Lady, Seaton Delaval*, by W. S. Hicks—*Arch. Æl.*, Vol. XII., p. 229; and for a description of the monuments, as they appeared about 1840, see Howitt's *Visits to Remarkable Places* (ed. 1842) Second Series, p. 373.

‡ These shields armorial are critically examined by Mr S. S. Carr in the *Proceedings of the Newcastle Society of Antiquaries*, Vol. IX., p. 179.

Delavals and allied families. The arches at the entrance into the chancel and above the Holy Table are supported by short columns, with plain heavy capitals, and wrought with double tiers of zig-zag mouldings. The walls are decorated with armour, tattered banners, and escutcheons. There are also two monuments, one of which represents a recumbent figure of a knight in armour, resting upon his left arm, his shield plain; and the other a recumbent figure of a female, with her hands elevated. Each figure has a dog at its feet, the usual emblem of faithfulness.

The hall at Seaton Delaval was built about 170 years ago by Admiral Delaval, after a design by Sir John Vanbrugh, who was also the architect of Blenheim Palace, and many other seats of the English nobility.* The porticoes, the hall, and the saloon, are the chief features of the building. The offices in the lowest storey are all vaulted with stone. The wings project at right angles to the north front of the house, and they have fine arcades along the whole length of their inner fronts; they contain the kitchens on the west side, and very noble stables on the east. The large addition to the east end of the main building has broken the uniformity of the original design, though it has been executed after Vanbrugh's style.† This building has been very unfortunate, for the west wing was destroyed by fire in 1752, and subsequently rebuilt. The central hall was

* "By the sea, near Seaton Delaval, so called from the town or villa by the sea, and the local name of its ancient baronial possessors, the Delavals, is a freestone, accounted excellent both for colour and duration, of a whitish-brown, with splendid micaceous particles. That grand structure . . . Seaton Delaval, was built of it." . . . —Wallis, *Northumberland*, Vol. 1., p. 57.

† Sir George Douglas identifies Carne Hall in Mr Ernest Rhys' story, *The Fiddler of Carne*, with Seaton Delaval.—"A palace out of place! A more stately and august design you shall hardly find among all the great houses of Inigo Jones, that master of his art, who designed it. A lofty pile served as its centre, with an array of columns, exquisitely set, divinely portioned, and approached by three simultaneous flights of steps, fit to give a generous entrance to troops and battalions of guests. The immense portico easily received these steps, and opened palatial doors to them."—Ernest Rhys, *The Fiddler of Carne*, p. 120.

destroyed in the same manner in January 1822, and has not been restored.*

The family of Delaval, related to the Norman Conqueror by the marriage of Guido or Guy de la Val to Dionysia, William's niece, obtained large grants of manors and lands in Northumberland and other parts of England. Gilbert Delaval took up arms against King John, and was with the barons at Stamford at Easter 1215, but was not, as has been sometimes stated, one of the twenty-five barons who were sworn to see the due execution and observance of Magna Charta and the Charta de Foresta.†

Sir Ralph Delaval, a cadet of the family, and a distinguished naval officer, fought gallantly at La Hogue, rose to be Vice-Admiral of the Red, and was buried at Westminster Abbey. It was more particularly during the time of Sir Francis Blake Delaval (died 7th August 1771), and his brother, Sir John Delaval (who in 1783 was raised to the peerage of Ireland), that the family acquired their reputation for courtly splendour, profuse living, and open-house jollity. Sir Francis Delaval having determined to enter Parliament, went down to Andover,‡ which then returned two members to the House. An utter stranger to the place, he obtained his election by an original manoeuvre. On the nomination day he discharged, from a culverin, five hundred guineas over the heads of the multitude assembled round the hustings, which soon determined the choice of the free and independent voters, and he was elected as one of their representatives. Other singular stories are told of his subsequent elections, one of

* For fuller description of the hall see Wallis, *Antiquities of Northumberland*, Vol. II., p. 276; Hutchinson, *View of Northumberland* (ed. 1778) Vol. II., pp. 330-333; and Mackenzie, *Northumberland*, Vol. II., pp. 418-420.

† For an extensive, and in every way admirable, account of the family history and genealogy of the family of Delaval see the Rev. E. H. Adamson's *Attempt to trace the Delavals from the time of the Norman Conquest to the present day*, printed in *Archæologia Eliana*, Vol. XII., pp. 215-228. The results of more recent investigations into this history of the Delaval family may be found in the Rev. R. E. G. Cole's *History of the Parish of Doddington*, Lincolnshire.

‡ cf. Howitt's *Visits to Remarkable Places*, Second Series, pp. 367-371.

which is related by Edgeworth in his "Memoirs" respecting the contest for Andover at the general election in 1768, when Sir J. B. Griffin was returned at the head of the poll with seventeen votes; the second member was B. Lethieulier, with fifteen votes; and the defeated candidate was Sir F. B. Delaval, who only polled seven. Sir Francis, moreover, found himself at loggerheads with his attorney, an acute practitioner, whose bill had been running for years; although considerable sums of money had been paid on account, a prodigious balance was still claimed as unsettled, which Sir Francis disputed at law. When the case came before the Court of King's Bench, in an exorbitant bill of charges, the following item excited amusement:—"To being thrown out of the George Inn, Andover; to my leg being thereby broken; to the surgeon's bill; to loss of time and business—all in the service of Sir F. B. Delaval—£500."

This charge requires explanation. It appeared that the law agent, by way of promoting the interests of his principal in the borough, had sought to propitiate the mayor and corporation—important potentates at electioneering times—in whose hands was vested so much of the local influence. A pretext being necessary to decoy these worthies to a banquet, where they might be conciliated, the attorney sent cards of invitation to the mayor and corporation in the name of the colonel and officers of a regiment in the town; and at the same time invited the colonel and staff, in the name of the mayor and corporation, to dine and drink the king's health on his birthday—an ingenious ruse—but the diplomatist had literally "reckoned without his host." The two parties met, were mutually courteous, ate a good dinner, toasted His Majesty's health, and proceeded to other post-prandial compliments before breaking up. Then came the acknowledgements. The commanding officer of the regiment made a handsome speech to Mr Mayor, thanking him for his hospitable invitation and entertainment. "No, Colonel," replied the mayor, "it is to you that thanks are due, by me and my brother aldermen, for your generous treat to us." The colonel replied with as much warmth as good breeding would allow. The mayor retorted in downright anger, vowing that he would not be choused by the bravest colonel

in His Majesty's service. "Mr Mayor," said the colonel, "there is no necessity for displaying any vulgar passion on this occasion, permit me to show you that I have here your obliging card of invitation." "Nay, Mr Colonel, there is no opportunity for bantering, here is your card." The cards were produced simultaneously. Upon examining the invitations, it was observed that, notwithstanding an attempt to disguise the hand, both cards were written by some person who had designed to hoax them all. The eye of each discomfited guest turned spontaneously upon the attorney, who had found it necessary to be present to flatter the aldermen; his impudence suddenly gave way; he faltered and betrayed himself so fully by his confusion, that, as an act of summary justice, the colonel threw him out of the window. Hence the item debited to Sir F. B. Delaval's account.

When the party visited the stables, Canon Walker told the following story in regard to the family:—

"Sir F. B. Delaval invited a large and brilliant company to an entertainment at Seaton Delaval. The guests assembled, and waited long, and seeing no signs of preparation, began to think themselves the victims of one of Sir Francis's jokes. At last doors were thrown open, and they were ushered, not into the dining room, but into the stable, the great vaulted hall (62 feet by 40 feet) which occupied the eastern wing. Here they found all the usual stable fittings removed, and a feast laid out in a brilliantly lighted and decorated hall."*

Edward Hussey Delaval died without issue, on 14th August 1814, aged 85 years, and was buried in Westminster Abbey. At his decease the entailed estates passed to his nephew, Sir Jacob Astley, Bart., of Melton Constable, Norfolk, and they are now held by Lord Hastings, who occasionally resides at Seaton Delaval.

The harbour of Seaton Sluice, constructed at great expense by Sir Ralph Delaval in the reign of Charles II., was greatly

* On the authority of Lady Mexborough (daughter of Francis Blake Delaval) see J. Robinson, *The Delaval Papers*, privately printed, cap. ix., pp. 83-84. This little book (216 pages) contains a great number of family letters printed from the originals, found in 1886 in a disused building at Seaton Sluice.

improved by Lord Delaval, who cut a passage through the solid rock 900 feet long, 54 feet deep, and 30 feet wide.* Up to about the end of the last century considerable quantities of coal and bottles were exported. But the place has long since fallen into decay, owing to the improvements and increased facilities afforded by the adjoining ports of the Tyne and Blyth. It is stated that Sir Walter Scott borrowed his description of the port of Ellangowan, in "Guy Mannering," from the port of Seaton.† Sir Walter also alludes to the hall in "Marmion,"‡ in the lines—

And now the vessel skirts the strand
Of mountainous Northumberland.

.....
They marked amidst her trees the hall
Of lofty Seaton Delaval—

although the hall had not replaced the ancient castle at the period at which "Marmion," is laid.

The Monk's Stone, near to Tynemouth, is nothing more than the remains of an ancient cross, upon the pedestal of which was this idle inscription:—"O Horror to Kill a man for a Pig's Head." This motto Mr Grose, with considerable hesitation, attributes to a liquorish monk of the cell of Tynemouth, who, strolling to Seaton Delaval, cut off a pig's head from the spit, and made the best of his way homeward with it. "Mr Delaval, on his return from

* *cf. Arch. Æl.*, Vol. XII., pp. 221 and 227.

† "They . . . found a very small harbour, partly formed by nature, partly by the indefatigable labour of the ancient inhabitants of the castle, who . . . had found it essential for the protection of their boats and small craft, though it could not receive vessels of any burden. The two points of rock, which formed the access, approached each other so nearly that only one vessel could enter at a time. . . . A ledge of rock had, by the assistance of the chisel and pickaxe, been formed into a sort of quay. The rock was of extremely hard consistence, and the task so difficult, that . . . a labourer who wrought at the work might in the evening have carried home in his bonnet all the shivers which he had struck from the mass in the course of the day."—Scott, *Guy Mannering*, cap. 40.

‡ *Marmion*, canto II., ¶ VIII.

hunting, enraged at this audacity, remounted his horse, and pursuing the offender, overtook him at this place, and so belaboured him with his hunting whip that his death, which happened within a year and a day, was laid to his charge."*

The village of Whitley was held by the Prior of Tynemouth, by the service of making, at the tower there, an annual feast, called *le conveyes*, to the members of the monastery and certain of its dependents, on Innocents' Day and the day after. As horses and dogs were included in the number of the guests, it is probable that hunting formed part of the amusement.†

St. Mary's Lighthouse, one of the latest and most important lighthouses on the north-east coast, was first used on the night of the 31st August 1898. The tower is circular, 120 feet high, the character of the light being two flashes in quick succession every 20 seconds. The intensity of the light in thick weather is 121,500 candle power, and in clear weather 81,000 candle power, the light being produced by a five-wick concentric burner, surrounded by four lenses, each of which has a vertical angle of 80 degrees, and a horizontal angle of 90 degrees. The light apparatus is of novel and original construction. At the present time there is only one other of a similar character in the English lighthouse service, at Lundy Island, Bristol Channel. The weight of the revolving apparatus is nearly four tons; it floats in mercury, contained in a circular trough, the quantity required for this purpose being only about eight or nine cwt. The advantages gained by this arrangement are the reduction of friction to a minimum, less driving power required, and greater steadiness of motion. Higher speed is also obtained, one revolution being completed in 40 seconds, during which period four flashes are produced, the duration of the flash (which is of great intensity) being only about two thirds of a second.

* Mackenzie, *Northumberland*, Vol. II., p. 460; but cf. Grose, *Antiquities of England and Wales*, Vol. IV., p. 127, where there is a plate after Hooper (1785.)

† Mackenzie, *Northumberland*, Vol. II., p. 458.

The illuminant is paraffin oil, which is stored in tanks at the bottom of the tower, and thence pumped up into the cisterns in the service room; from there the oil is forced through the burner by means of two hydraulic pumps, the object being to maintain a constant flow of oil. When the light is burning at full power the quantity of oil passing through the lamp is about 20 gallons per hour, three-quarters of a gallon only being consumed. The burners are perforated about $1\frac{1}{2}$ inches below the burning level of the oil, through which percolates the surplus oil, returning to the cisterns in the service room, thus keeping the burner and oil perfectly cool, as well as the wicks thoroughly and regularly supplied with oil.

This description of light is of recent introduction into this country. Several lighthouses, however, on the French coast are illuminated on this principle. The duration of the flash is exceedingly short; but from the intensity of its power, owing to the size of the lenses, it can be readily "picked up" at sea, and seen at a greater distance than the slower revolving lights which have hitherto been in use.

It may not be uninteresting to mention that the lighthouse is built on the site of an old chapel attached to Tynemouth Priory, from which, it is stated, the monks exhibited a light to guide mariners navigating this dangerous portion of the coast. What a contrast is there between this powerful light and the feeble effort of the monks, who are, however, to be admired for using what their limited means and knowledge allowed!

Although this is neither the time nor the place to enter into a description of lighthouse illumination, it is not possible to leave the subject without making a few observations. There is a continuous history of lighthouses from the time when the Pharos was built at Alexandria, about 300 years before the Christian era, a description of which is given by Pliny. That tower was about 500 feet high, and is stated to have cost in our money about £180,000, a sum which would stagger the public authorities of to-day, if expended upon any single lighthouse. Yet, magnificent as that building must have been, it was only lighted by means of a wood fire, and in clear weather could be seen for about 30 miles.

From that time down to the close of the last century, or for a period of 2100 years, not one single improvement was introduced. A lighthouse has a double duty to perform; not only does it warn the sailor of danger, but it enables him to find his position; the latter aspect being quite as important as the former, each lighthouse having a distinctive character. This consideration made coal and wood fires useless, and often led to great disasters, through the confounding of one light with another. Many illustrations of the inadequacy of such lights, and the dangers attending them, could be given, but one will be sufficient for our purpose, in the fate of His Majesty's ships *Nympha* and *Pallas*, which were wrecked in the year 1810. Overtaken in the North Sea by a heavy easterly gale, they were making for the Firth of Forth for shelter, and unfortunately mistook the light from a limekiln near Dunbar for the lighthouse on May Island. They did not find out their error until they were embayed, and it was too late to avoid being driven on shore. Happily, out of 600 men on board the vessels, only nine were drowned; but the king lost the services of nine gallant seamen, and vessels to the value of £100,000. It may be mentioned that the Scottish Lighthouse Commissioners have now introduced at the lighthouse on the May an electric light of 6,000,000 candle power, as well as a fog signal station.

The writer has in his possession an engraving, printed about 130 years ago, of the Tynemouth lighthouse, which was taken down last year, after St. Mary's came into use. The tower is shown as it existed till its history ended, except that in the place of the modern lantern there is an open grate with a coal fire. The coal fire which continued as late as the year 1825 (if the writer's memory be correct) at St. Bees, Cumberland, is supposed to be the last coal fire exhibited in Great Britain.

An illustration shall be given of the great improvements made during the present century, and the benefits the lighthouse service have conferred, not only in the interests of navigation, but to humanity at large, by the facilities offered for the extension of commerce, and the interchange of the products of the world.

The Darling family has been associated with the lighthouse service for five generations to the writer's knowledge. He knew intimately William Darling, the father of Grace Darling, a remarkable man, and one probably known to many of the older members of the Club. He was a man of great intelligence, far above his station in life, and in appearance one of Nature's nobility. He told the writer that, when a lad, he assisted his father in carrying up the coals to the lighthouse on the Farne Islands. During his early manhood the catoptric or reflector system of lighthouse illumination was introduced. His son, William Brookes Darling, was for many years principal keeper at Coquet lighthouse, where the dioptric or lens system of condensing light was adopted in the year 1841. The son of this keeper was for many years assistant keeper at the neighbouring lighthouse at Souther Point, where the electric light was first permanently established in the lighthouse service of this country, the flash of the revolving light being equal to 800,000 candle power. From these statements may be seen the progress which has been made in three generations of one family, the more remarkable when it is remembered that stagnation existed for over 2000 years, during which there were no improvements.

What better proof can be desired that the lighthouse service of this country is in thorough touch with the progressive, enquiring, and scientific spirit which so distinguishes the Victorian era, and makes the 19th century, now rapidly drawing to a close, remarkable in the history of the world, for its discoveries, wresting from Nature her secrets and powers, and making them subservient to the wants, the well-being, and the happiness of the world at large.*

After partaking of some refreshment, provided at St. Mary's Island, the drive was resumed. Time did not permit of more than a passing glimpse of the conformation of rocks at Whitley, the little fishing harbour, and the

* The writer is indebted for the information regarding the Delaval family to Mackenzie's *History of Northumberland*, and an article that appeared in the *Monthly Chronicle of North Country Lore and Legend*, in the month of December 1887.

old mansion of the Doves, at Cullercoats. At Tynemouth the party was conducted to the ruins of the ancient priory church, the history of which was sketched by Canon Hicks, the vicar of the parish of Tynemouth Priory, and by Canon Walker, to both of whom, as to Mr Morton, the thanks of the Club were due, and were subsequently acknowledged.

The following dined with the President, Mr James Smail, at the Bath Hotel:—Rev. George Gunn (Secretary), Rev. Edward Arkless, Mr John Bolam, Mr and Mrs G. G. Butler, Mr John Cairns, Mr S. S. Carr, Sir George Douglas, Bart., Mr M. H. Dand, Hon. and Rev. W. Ellis, Rev. Jas. Fairbrother, Mr Giles, Mr J. G. Goodchild, Rev. Dr Paul, Mr G. C. Heslop, Mr and Mrs Robert Huggup, Mr R. C. Hedley, Mr John Hogg, Mr J. Crawford Hodgson, Rev. Ambrose Jones, Mr W. H. Johnson, Mr and Mrs F. Lynn, Rev. Thomas Leishman, D.D., Mr B. Morton, Colonel Milne Home, Captain Norman, R.N., Mr A. Riddle, Mr Ralph Richardson, Mr J. Reed, Mr John Roscamp, Mr J. A. Somervail, Mr Adam Scott, Mr and Mrs Edward Thew, Mr George H. Thompson, Canon Walker, Mr E. Willoby, and others.

BERWICK.—By the Secretary.

THE ANNUAL MEETING for the year 1899 was held as usual in the Museum, at Berwick, on Thursday, 12th October.

It had been arranged that, prior to the business meeting, Captain Norman and Mr Goodchild should conduct those members, who were geologically inclined, to the Burgess' Cove, the chief cove in the vicinity of Berwick; but, to the regret of everyone, the rains of the morning made it prudent to forego this visit to the rocks. In the circumstances the party agreed to meet at the Museum at twelve o'clock, where Captain Norman read the paper he had prepared upon the geology of the coast, and which will be found in the Proceedings.

The business meeting followed at one o'clock, the following members being present:—Mr James Smail, F.S.A. (Scot.), President; Rev. George Gunn, Secretary; Mr George Bolam, Treasurer; Sir Gainsford Bruce, Captain Norman, R.N., Colonel Milne Home, Major Macpherson, Rev. David Paul, LL.D., Rev. Evan Rutter, Messrs W. B. Boyd, Charles Stuart, M.D., G. P. Hughes, John Ferguson, F.S.A. (Scot.), Charles B. P. Boeanquet, J. A. Somervail, David Hume, Elliot R. Smail, Henry Paton, T. B. Short, David Herriot, John Dunlop, William Weatherhead, John Barr, William Wilson, James Stevenson, and G. D. Cruse, Croydon (guest.)

The President mentioned that apologies for absence had been received from ten members, and then proceeded to deliver his Address, at the close of which, in resigning office, he nominated Mr A. H. Evans, M.A., of Cambridge, as next year's President. On the motion of the Rev. Dr Paul, the President was cordially thanked for the discharge of his duties in the chair throughout the year, and for his Address.

The Reports of the Meetings were taken as read, and the following exhibits were laid on the table:—A drawing by Mr Tom Scott, A.R.S.A., of a fine Bronze Spear-head, which had been found at Rutherford, Roxburghshire, and a reproduction of which forms one of the illustrations in the present number of the Proceedings. A series of photographs illustrating a Cist, showing the position of the bones in it, discovered at Belvidere, Hawick. A slab of polished wood of the Douglas Pine, showing its fine texture; and a photograph of ancient Ripple-marks on a stone, from the banks of the Whitadder, at Willie's Hole, Broomdyke's Haugh, by Mr James A. Somervail.

The Treasurer made his annual financial statement, and his accounts were duly audited by Mr Elliot R. Smail.

The amount of the subscription for the year was fixed at 10s., and the following new members were elected:—

Robert Blair, F.S.A., Harton Lodge, South Shields.
George Hartley Ballard, Grammar School, Berwick.
Walter Cochrane, Lynhurst, Galashiels.
Rev. A. E. Cooper, B.A., Staunington, Cramlington.
Adam Darling, Bondington, Berwick.
Thomas Grahame, The Avenue, Berwick.
John Grey, South Togston, Acklington.
John Carlyle Johnstone, M.D., The Hermitage, Melrose.
Capt. Wm. Hy. Stopford Heron Maxwell, Muirhouselaw,
Maxton, St. Boswells.
George Fraser McNee, 16 Chambers Street, Edinburgh.
James Millar, Solicitor, Duns, N.B.
Ebenezer Beattie Mercer, Manufacturer, Stow.
Rev. Thomas Marjoribanks, B.D., The Manse, Houndwood.
James Romanes, Harewood Glen, Selkirk.
George Rankin, W.S., Lauder.
Robert Charles Campbell Renton, Mordington, Berwick.
Elliot Redford Smail, 7 Bruntsfield Crescent, Edinburgh.

James Veitch, Inchbonny, Jedburgh.

Andrew Whitley, Commercial Bank of Scotland, 62 Lombard Street, London.

Thomas Young, Banker, Innerleithen.

The following dates and places of meeting for 1900 were agreed to, subject to any necessary alteration by the officials of the Club:—

Wednesday, 6th June.—Alnwick Castle and Parks.

Wednesday, 27th June.—Beal, for Kylse Crag, or Holy Island.

Thursday, 19th July.—Berwick and Burnmouth.

Wednesday, 29th August.—Aberlady and Gullane Links.

Wednesday, 26th September.—Cockburnspath, for Aikengall.

Thursday, 11th October.—Berwick, for Annual Meeting.

Colonel Milne Home gave in a report by the Committee on the Memorial Window to the late Dr Hardy, and it was stated that the window would be finished during the spring, and that members would then be invited to see it.

The Secretary read the report of Mr Hughes, the Club's Delegate to the meeting of the British Association at Dover, and Mr Hughes received the thanks of the Club for his attendance, and was re-appointed Delegate to next year's meeting at Bradford.

This concluded the business, and members subsequently dined together at the King's Arms Hotel.

As in former years, The Anchorage, the residence of Mrs Barwell Carter, in Woolmarket, was thrown open to the Club, and the customary kindly welcome was extended to all who called to examine the numerous relics of the late Dr George Johnston in her possession. Members had here also the pleasure of renewing their acquaintance with Miss Dickinson of Norham, who had as usual brought with her a large selection of her beautiful drawings of native plants for exhibition.

Monstrosity in the Crab. By GEORGE BOLAM, F.Z.S.

(PLATE I.)

THE figure on Plate I. is reproduced from a water colour sketch—by Mr William Wallace, junr.—which I had the pleasure of laying upon the table at the last Berwick meeting. It very faithfully represents a monstrosity in the toe of a Common Edible Crab (*Cancer pagurus*) caught in Berwick Bay, in April 1893.

I purchased the specimen, and forwarded it to Mr W. Bateson of Cambridge, who expressed much interest in it. The drawing gives so good an idea of the toe that it is scarcely necessary further to describe it, but it may be added that the crab was also possessed of three eyes, the extra one being placed slightly above the ordinary left eye. The crab had been boiled before it came into my possession, so that it was not possible to tell whether or no all the eyes had been capable of use during life, but they each appeared to be equally developed.

On 14th April 1898 I saw a crab, alive, in a shop in Berwick, which had one of its great toes somewhat similarly mal-formed, there being three, instead of the usual pair of pincers, two of them being jointed.

In the Hancock Museum, at Newcastle-on-Tyne, there are one or two dried examples of similar monstrous developments in the toes of the crab.

The Geology of the Berwick Coast Line. By COMMANDER
F. M. NORMAN, R.N.

[Read at the Berwick Meeting of the Club, on 12th
October 1899.*]

THE exigencies of time confine me to the very briefest and crudest outline of our subject. The coast line which we now view, apart from its natural beauty and attractiveness, is one of great geological interest, because, on and about it, several geological systems are represented; and because, besides, the results of a great geological or terrestrial catastrophe are clearly evidenced. Indeed, I know of no locality where so many leading features are comprised within so limited an area.

The geological systems, or eras, which are represented, are the Silurian, the Old Red Sandstone, the Carboniferous, the Glacial, and Intrusive Igneous Rocks. Had we but more time at our disposal, I could conduct you to all of these, and I hope that at some future meeting, either sectional or general, opportunity will be afforded of studying, and of explaining to our geologically inclined members, a little more about this most instructive locality than we can possibly accomplish this morning.

We stand now on, and confining our gaze to the coast line, we have before us the lower strata of the Carboniferous limestone, which means some of the oldest and lowest beds of the second, first formed, or lower division of the great carboniferous or coal producing system. The nearer we travel to Newcastle, the higher we rise in that system, gradually arriving by an ascending series of beds as we approach the smoky metropolis of Northumberland, on the

* The reading of this paper was intended to have taken place upon the rocks near "the Burgess' Cove," had the weather permitted,

coal measures proper, which may be said to be typically represented at historic Wallsend. Please understand that when we speak of the carboniferous limestone in a general way, of such and such a town or place being situated on it, the whole series is signified, which comprehends alternating strata of sandstone, limestone, shale, and coal. Thus, a man's property might be described as "on the carboniferous limestone" without, in reality, any limestone being accessible from it at all. Now, along our coast here, we have the carboniferous limestone in its typical aspect; namely, limestone of different degrees of texture and purity, with characteristic fossils, of which the most noticeable are the coralline *Lithostrotion junceum* (here is a specimen), and *Productus giganteus*, a bivalve, which will be laid on the Museum table at our meeting. The limestone varies exceedingly in quality, but the purest is quarried at the Scremerston Lime-works, whose smoke is now visible, which is said to contain 95 per cent. of carbonate of lime.

The sandstones of the series are white, yellow, pink, or red—chiefly reddish—but here I may remark that because a sandstone is old and red, it by no means follows that it belongs to the "Old Red," as the Old Red Sandstone is familiarly called. That which will come under notice to-day, as we walk along, belongs to the carboniferous limestone series, much of it exhibiting, in a marked and beautiful degree, the effects of weathering, and of what is called "false bedding"; that means where the layers lie at a different angle to those beneath them in the same block, showing an alteration in the course, depth, and conditions of the river or current during deposition. The walls of Berwick are entirely built of local limestone of good quality, very durable and hard to work, except here and there where sandstone has been used for repairs.

Now, as regards coal, we have represented two seams, or rather aggregations of seams. First, the Lamberton coal,

some unimportant beds which are laid bare here and there from Marshall Meadows northwards, and which were formerly, though unprofitably, worked. Travellers by rail must often have noticed, about $2\frac{1}{2}$ miles from Berwick, between the line and the sea, the tall shaft which marks the site of the old coal pit. Secondly, and, of course, the only important ones, are the Scremerston coal pits, which, in the geological scheme, lie below the Lamberton. These coals, though not of first-rate quality, are interesting, because they represent about the lowest, and therefore oldest, coal in our land.

But now I must say a few words in explanation of my reference to a geological catastrophe. If we ramble along the coast from Berwick to Burnmouth, we shall notice nothing but lower carboniferous formations during the whole of our walk. We shall observe limestones, sandstones, shales, thin layers of coal, with here and there a trace of igneous rock, which has been injected in a white hot fluid state among the sedimentary beds at some time. But if we direct our steps inland, we quickly find ourselves upon a totally different sort of rock. At Burnmouth, indeed, almost immediately, we come, in fact, upon Silurian "greywacké" (here is a specimen), of which the rising land on the north of Berwick, the whole of the Lammermuirs, and much of the intervening tract is composed, and on which the railway from Berwick to Cockburnspath principally lies. If you glance out of the railway carriage just before you enter, and just after you leave Burnmouth Station, you see at once, close to you, excellent and unmistakeable sections of Silurian; but if you alight and walk down the steep brae to the shore, at that romantic little fishing village, lo! the Silurian has vanished, and you are surrounded by and tread upon different rock altogether—the limestones and sandstones, in fact, of the lowest carboniferous, which continue all the way to the mouth of the Tweed.

Now, the most elementary student of geology will at once

notice something remarkable here. He will ask how it is that the carboniferous rocks, which are much later and newer than the Silurian, and therefore ought to overlie them, are here actually beneath them. The explanation is "a fault"; that is, at some very remote period, during some tremendous local convulsion of the earth's crust, the whole of the carboniferous strata, from Burnmouth to Berwick nearly, were dislocated, slipped, or faulted down below the Silurian. Indeed, so clearly is this the case that the division between the two sorts of rock—the "line of fault" as it is called—can in many places be clearly traced. Unless all that is accepted, the geology of this part of the coast will be a permanent puzzle; and what complicates that more is that, just as in our social or municipal system we find "wheels within wheels," so here we find "faults within faults," there being, besides the principal, main one, included within it several minor or secondary faults, which are most distracting and annoying, and seem to have been put there on purpose to puzzle and vex the geological tyro. For instance, the banks of Dodds's Well Rifle Range, or Burgess' Cove Bay, are due to a secondary fault, of which the line can be seen at either end. But our student will want to know something more. He will say—When I get up to and beyond the rail, and wander about Halidon Hill and Lamberton, I find nothing but Silurian, unmistakeable metamorphic Silurian, which looks like what it is—baked sediment. What has become of all that vast accumulation, hundreds of feet at the least, of sedimentary strata, which must have covered this Silurian; I mean the old red and carboniferous systems, so much of which I still find to the north and south? The answer this time is: Denudation. They have been washed away by water and ice long ages ago, though little bits have been left here and there, which show that it must have been so. Coal is found lingering on the sides of Cheviot. At Jedburgh is an old coal pit

on a hill, and between this place and Burnmouth I could show you, not far off, at least three places where the old red conglomerate sticks yet to the Silurian. Denudation has been a most mighty agent in reducing and moulding the surface of the earth as we have it, a fact which is now accepted, but until comparatively recent years was not sufficiently understood.

I must now say a few words about the intrusive basaltic and the glacial era which I mentioned. Illustrations of both are not far to seek. There, on the southern horizon, we catch sight of the Farnes, with a glimpse, on a clear day, of Grace Darling's famous lighthouse. Nearer, the castles of Bamburgh and Holy Island are prominent objects. All those places, and more which I cannot stop to enumerate, are, or rest upon those intrusive igneous rocks which are well-known phenomena all over Borderland. The effects of a glacial era, when that land was covered with a thick, enormously thick, blanket of ice, are seen, too, in the Till, Drift, or Boulder clay, which, in various degrees of thickness, is a familiar object to everyone, though everyone may not be aware of its origin. I walked up the Bowmont valley above Yetholm the other day, for a few miles, and marked how the modest little stream, though formerly a large river, with intervening lakes, had eaten its way down through the boulder clay. But we need not go so far as that for an example, for we stand on it; it is all around us; you promontory, as you see, is capped with many feet of it; every river or burn side brings it into view. It is, so to speak, geological flour ground in the glacial mill. The glacial era was the latest geological era. As the ice sheet and the glaciers slid along in their movement towards the sea, they ground up the surface on which they moved into powder of every degree of consistence, mixed with stones of every sort and size. This, though it may be, and generally is, perfectly dry, is boulder clay.

The cave which we visit to-day is called the Burgesses' Cove, because it is situated on the property of the Freeman of Berwick. Formerly, I am informed, it was used by them as a convenient retreat for discussion of electioneering matters, and for the adjustment of certain claims connected with elections, which demanded secrecy and privacy; but under existing conditions the cave is no longer necessary for such purposes. Othello's occupation's gone. A few years ago a schoolboy from the south, who was visiting me, asked, "Got any caves here?" "Oh, yes, we have." "Then you have smugglers, of course?" "No," I answered, "we have no smugglers." "No smugglers!" echoed my youthful interrogator, in a tone of scornful surprise, as if he were convicting me of being in the possession of caves under false pretences; "no smugglers! What do you do with your caves, then?" I was obliged sorrowfully to confess that, except as places of resort for the curious, our caves are at present without occupation. Hollowed out in the course of centuries by the continuous action of the relentless sea, they have no doubt been the refuge, in bygone times, of many a smuggler; but now, except we join with our juvenile friends fresh from the perusal of stirring tales of adventure, in lamenting the degeneracy of the age which leaves their recesses tenantless, we shall find, beyond their shape, little inside to arrest attention, except numerous old initials and dates, of which the oldest I have traced are 1703 and 1709, and perhaps 16— something; though outside, we can notice the fantastic weathering and so forth. And when we consider that all these and like rocks are made up of grains of quartz, which were, age after age, slowly worn away from still older rocks by the action of the sea, consolidated beneath its surface, and raised up to form dry land, we may obtain some glimmering idea, faint though it be, of the vast extent of what is known as geological time.

Entomological Notes from Galashiels during 1899.

By W. SHAW.

HUMMING BIRD HAWK MOTH (*Macroglossa stellatarum*.)

This insect made its appearance here in May and June. The weather in April and beginning of May was very frosty, and outside the town there was an utter absence of wild flowers. After this a warm spell of weather set in, and it was then that these insects began to appear in great numbers. It confined its visits mostly to tubular flowers, such as lilac, yellow azalea, and wallflowers, and outside of the town it was seen frequenting the flowers of gorse or whin. The moths must have come in from the neighbouring hills, as there is not a single plant of the order on which the caterpillar feeds in the whole town. Altogether, perhaps about 50 specimens were taken here, and many more might have been caught.

Arctia mendica.

A single specimen of this insect was taken here last season. It had not been previously noticed.

Trichiura cratægi.

There has only been one of this insect taken also, but the larva is supposed to be common on the moors here.

Mamestra furva.

I was very much pleased to see a series of six of this moth captured here at sugar. It occurs on the hill tops. It was found at the highest level in Berwickshire also, the

lowest level being at Berwick, when Mr George Bolam took both imago and larva frequently. I consider this a good addition here.

Noctua depuncta.

Not at all common here.

Noctua neglecta.

Several of this insect have been taken at sugar on our moors.

Tryphaena subsequa.

Extremely scarce here, though Mr Bolam has frequently taken it near Berwick.

ABSENCE OF WASPS IN 1899.

Though there never were so many wasps as in 1898, there never were fewer than in 1899. There were a couple of weeks of sunny weather in May, and it was then the queen wasps made their appearance, in about the usual numbers; but all the sunny days had frosty nights, and in the morning the wasps were quite benumbed, and later on they took refuge in houses, where they were killed, or died from the exposure to so much frost at nights. About two dozen queens were killed here, but in one place in Northumberland 54 queens were killed. I am sure I did not see a dozen working wasps during the whole summer, and I fancy there must have been only one nest in this locality. A correspondent says the wasps this year are nearly all of the kind that make their nests in the ground.

Ornithological Notes. By GEORGE BOLAM, F.Z.S.

WAXWING. *Ampelis garrulus*, Linn.

Waxwings occurred in many places throughout the country during the winter of 1897-8, and my note books contain the following records for our district.

Two were killed at Amble, on 4th January 1898; on the 16th another fell a victim to a boy's catapult, on a hedge by the roadside, near Belford Railway Station, and is preserved at the Castle Inn, Bamburgh; and a pair were shot at Felton Park about the same time. On Sunday, 23rd January, the late Mr H. H. Crow watched an individual feeding upon the berries of a beautiful bush of *Pyracantha*, which grows on the front of one of his cottages at Foulden West Farm, and which, from the abundant crop of richly coloured fruit which it seems to carry every year, can scarcely fail to attract the attention of anyone passing along that road in winter time. Often have I stopped to admire that bush, and have more than once had some trouble in satisfying a companion, who would persist that he had never seen the like before, that the plant was not an uncommon one in the country.

MEALY REDPOLE. *Linota linaria* (Linn.)

I saw a very pretty specimen of this bird, on the sea banks below Fenham-le-Moor, on 1st March 1898. It was quite alone, and rather more than usually pale coloured, and appeared to be, at the same time, an exceptionally small example of this pretty species.

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Not far from the same place there was a flock of about twenty Twites, *Linota flavirostris* (Linn.), feeding upon a stubble field, in close proximity to a flock of many hundreds of Starlings. Being close to the sea, and generally free from snow during winter, and being besides much addicted to runches and other weeds, this field is always a favourite resort of Twites, Linnets, Larks, *et hoc genus omne*, and well worthy of a visit by the ornithologist. It was here that the Lapland Buntings occurred in 1893, and I have also seen Shore Larks in the same field.

HOODED CROW. *Corvus cornix*, Linn.

On 3rd April 1898, there were five or six pairs of these birds frequenting Detchant Wood, and one pair at least had intentions of remaining there, for I watched them for some time carrying sticks about in their bills, and they were evidently building a nest not far off. On 24th May three individuals were observed feeding upon the sands at Budle Bay.

YELLOW WAGTAIL. *Motacilla raii* (Bonaparte.)

On 6th May 1898, one of these beautiful birds sat for some minutes, preening its feathers, on the garden hedge in front of my house at Haggerston Mead, and within four or five yards of me. It was in fine plumage, and three or four times uttered its call-note, "se-leep, se-leep," as it sat; about an hour later I saw it flying high over the house, and it did not appear again.

On 8th May 1899, I saw another fine example feeding on the grass fields near the Lough, at Holy Island. It was quite as tame as the last, but also appeared to be only a bird on passage, and was not seen afterwards. Mr Leyland tells me that he has seen the Yellow Wagtail occasionally about the artificial lake that he has formed at Haggerston, and it is in the neighbourhood of such a place that we may one of these days hope to find this species remaining to nest with us.

WHIMBREL. *Numenius phaeopus* (Linn.)

These birds are most erratic in their migrations, and frequently stay with us till very late in spring, or return again very early in the autumn. On 14th May 1898, my brother saw one on Yarrow Slake, just above the Royal Border Bridge, at Berwick; and on 12th June 1899, one was still frequenting the fields at Newton-by-the-Sea.

Very early in July they may be heard passing over head at night, on their return journey southwards, and, to those who have an ear for such music, there are few notes more familiar than the Whimbrel's oft repeated whistle amongst

"The various cries sent down at night
By birds of passage on their flight."

NIGHTINGALE. *Danlias lusciniæ* (Linn.)

Mr G. G. Butler, Ewart Park, drew my attention to an article (signed "P.A.G.") in *The Outlook* for 4th June 1898, in which Lady Margaret Cameron, of Lochiel, is quoted as writing from Achnacary:—"A nightingale was heard for three weeks, and also seen, during the month of June 1889. The thermometer 90° in the shade in May, very hot all May, June, and July, but cold and wet in the south and east of England." A reference is also made to my Whittingham record for 1893, and the author then adds:—"The same year (1893) the bird nested in the grounds of a friend of the writer, in Glendale."

I have no idea who "P.A.G." may be, and little or no reliance can be attached to an anonymous statement of this nature, but the above is at any rate sufficiently interesting to merit a passing reference here.

SHORT-EARED OWL. *Asio accipitrinus* (Pallas.)

During the early part of the summer 1898, three or four of these owls might be seen, any afternoon, hawking over the young plantations and rough grass fields at Haggerston, where a generous protection is extended to all such birds

by Mr Leyland, whose example in this respect might with advantage be followed by other land owners. As is well known, these birds approach the diurnal birds of prey more closely than most owls in their manner of seeking food in broad daylight, and it was a pretty sight to see those at Haggerston quartering their ground in the most regular fashion. I suspect, however, that their powers of vision may not have been quite equal to the strong light of a midsummer sun, as otherwise it seemed difficult to account for the many false stoops which the owls made; flying at a height of from six to ten feet over the grass, they seemed to be constantly dropping into it without result. Though a mouse may, no doubt, on some of these occasions have been able to elude the owl's grasp, still, after close observation, I could not help fancying that many a time the supposed mouse must have turned out to be only a stone or other non-edible substance.

Whether or not these owls bred at Haggerston I was not able to satisfy myself; no nest was seen, and soon after the end of June they disappeared. One of them at least fell a victim to the zeal of a neighbouring keeper, who feared for his young pheasants. One of the owls was a very pale coloured bird—in fact, almost creamy white—and I thought at first that it might have been a young one; but Hall, the head keeper at Haggerston, told me that it had frequented the place through the previous autumn, and had often been put up on shooting days, when they were beating the young plantations.

In the early part of November there was a considerable flight of Short-eared Owls to Holy Island, many of which remained about the links for several weeks. I saw one there as late as 29th January 1899, hawking over the fields during the afternoon, and two others were seen a few days later.

HAWFINCH. *Coccothranstes vulgaris*, Pailis.

One was reported to me as having been seen at Holy Island in the early part of November 1897, and to have remained there for several days; another was killed at Felton Park during the same winter, as I have been obligingly

informed by Mr Cuthbert Riddell. A pair were noticed together in the Duke of Northumberland's Park, at Alnwick, on 3rd July 1898, where they would in all likelihood be nesting; and I have a record of another supposed instance of the breeding of this bird in our district during the same year, but it has not yet been verified. The Hawfinch has pushed its way considerably northwards of late years, and seems likely to maintain its footing.

RING OUZEL. *Turdus Torquatus*, Linn.

About the 24th May 1898, and again about the 12th May 1899, there were many of these birds on Holy Island, in conjunction with small bands of other migrants, including both Spotted and Pied Flycatchers, Redstarts, and a couple of Nightjars. These visitations generally occur during misty weather. On 9th October we disturbed two Ring Ouzels near the foot of Kyoie Crag, where they were feeding upon brambles.

When grouse shooting on Cheviot, one day in August, I was rather amused at the discussion which arose over one of these birds. It had been shot by one of our party from a patch of bracken, as we climbed the hill, and was an old bird in moulting condition, and of three gentlemen present, one did not know what it was, but thought it a *rara avis*, while the two others asserted it to be a dotterel! Old Alick, the shepherd, however, knew better, and confidently appealed to me to say "whether it wasna jist a *Hill-blackbird*."

JAY. *Garrulus glandarius* (Linn.)

There was quite an immigration of this species to the south of Scotland, and north of England, in the autumn of 1897, and many were reported from different parts of the Club's district. Dr Stuart first recorded them from Chirnside Parish, where one was shot on 23rd October, and two others seen, while a month or two later another was killed. At Middleton Hall, Belford, and Detchant Wood (an old breeding station from which Jays had long been extirpated) a number

appeared about the beginning of November, and probably remained till they were killed out. Drummond, the head keeper, reported them to be 'quite settled' on 16th January 1898, and some of them were still about the woods in the middle of April. I saw two which had been killed there in the month of February, and another was taken in a vermin trap, in the same locality, fully two months later.

At Howick, at least one appeared in autumn, and remained throughout the winter, but more than one was never seen at a time; it was still there on 24th March. On 20th January a pair were reported from Alnwick Park, where a little later five were said to have been seen together, and Meech, the keeper at Hulne Abbey, believed that a pair nested in the park during the following summer. This would in all probability be the case, as Mr A. H. Evans heard two calling there in April, and again another in June. About Rock four or five Jays were seen during the winter, two of them falling victims to the traps of a rabbit-catcher.

A little further to the south, in Northumberland, a few of the original Jays have always managed to maintain a footing, but during the winter of 1897-98 their numbers were very considerably increased by fresh arrivals, and they appeared in several places where they had not been known for many years previously. Four were shot in one day at Felton Park, during covert shooting; two others falling victims to the guns under similar circumstances at Acton House, where several more were caught at the pheasant feeds. One pair at any rate nested in the Acton woods in 1898, and I was informed that another nest had been found in Hazon Dene.

PIED FLYCATCHER. *Muscicapa atricapilla*, Linn.

There was a considerable influx of these birds in the spring of 1898, and a great rush of them in May 1899, when they were to be seen flitting about all over the district, especially along the coast line, and were in even greater numbers than during the great visitation of 1884.

In 1898, quite a number appeared about the gardens in the village on Holy Island, on and about the 22nd May,

upwards of a dozen being seen together at one place. At the same time many Spotted Flycatchers, Redstarts, and Ring Ouzels were observed, as well as two Nightjars, showing that a regular wave of migration had been arrested on the island. On the same day (22nd May) I watched a pair in the Cockleman's Dene, near Kylloe, where they were busily engaged in catching insects upon the wing about some old willow trees, and I had hoped that they might remain to nest there, but they did not. On 24th May a male appeared at Heiferlaw Bank, and I was informed by Mr Joseph Oliver that a pair had been seen near Little Ryle, about the place where they had nested in the previous year. In the Duke of Northumberland's Park, at Alnwick, quite five or six pairs remained to breed in 1898, the young birds in one nest being about half grown on 17th June. This nest was in a hole, in the bole of a large ash tree, at a height of quite thirty feet from the ground, the same site having been occupied, to my knowledge, in three successive years.

In 1899, Pied Flycatchers first came under my notice on the afternoon of 10th May, when three beautiful males were observed in my father's garden in Ravensdowne, Berwick, a male Redstart and one or two Willow Wrens being also present at the same time. The weather at this time was thick and foggy, with a very slight northerly breeze, and remained so till the 14th, and during that time Flycatchers and other migrants were very numerous. This is quite in accordance with previous experience, and goes to show that, either in autumn or spring, misty weather is by far the best for the observation of migration on our shores. The fog interferes with the vision of the birds, and compels them to descend to the ground, and they are either unable, or unwilling, to continue their journey till the weather has cleared again. In some cases, as in that of the Pied Flycatchers, the birds, finding themselves in suitable breeding quarters, are tempted to stay, and returning again in succeeding years, have so founded a colony which has gone on increasing and spreading.

Between the 10th and 14th May, Pied Flycatchers were everywhere to be met with. In Berwick itself there must have been a large number. They attracted attention in

almost every garden where there were trees or bushes to induce them to stay, and in more than one instance, where the conspicuous markings of the males caught the eye, people reported them to me as black-and-white sparrows. On 12th May I walked round part of the Town Walls, and found the Flycatchers, in threes and fours together, flitting about in all directions. In one large open garden, near the powder magazine, there were in sight at one time four male Pied Flycatchers and ten or eleven cock Redstarts, all of which were sitting upon stones or posts—the garden being almost destitute of bushes—or hopping about the beds and pathways on the lookout for food. Under such circumstances both these birds bear a considerable resemblance to the Robin, in their manner of pitching down to the ground from some slight elevation, in order to pick up an insect or small worm. In the absence of insects (their more legitimate food) Pied Flycatchers seem to take to worms almost as readily as their neighbours, and I have even noticed them following the gardener while digging, and dropping down every now and then to secure some worm, or grub, from the newly turned soil.

At Holy Island a number of Pied Flycatchers were observed on the 12th May, while on the two following days they were numerous at Beal, Haggerston, and Goswick. Males everywhere greatly predominated over females in point of numbers.

During May one was shot at Yetholm, and many others were seen in the neighbourhood of Kelso, where, on the 31st, I was informed that there were still at least one pair about the policies at Newton Don, and it was believed that they were nesting. At North Sunderland, Mr H. A. Paynter reported them to be quite numerous on the 13th, in company with many Redstarts, and he saw two on the Farne Islands on the previous day. At Alnwick also they were first noticed on the 10th May, and were in large numbers, several pairs remaining to nest, as usual, in the park, where, on 2nd June, I had the pleasure of seeing a nest containing four eggs, and when, had we wished it, other nests could easily have been found. From Chapel Hill, Mr John Wilson wrote me on 25th May that he had seen

several in the neighbourhood of Cockburnspath about ten days previously, some of which remained for a short time; and the list of localities might without difficulty be largely increased.

OSPREY. *Pandion haliaëtus* (Linn.)

About the beginning of June 1899, an Osprey was picked up dead, upon the sands at Goswick, where it had been washed up by the sea. It was quite fresh, and in good plumage, but very thin in condition—in fact, almost reduced to a skeleton.

HONEY BUZZARD. *Pernis apivorus* (Linn.)

A young bird, in dark plumage, was killed near Etal about 17th September 1896, and a few days later another example was shot near Falloden.

On the morning of 10th June 1899, a Buzzard, which, though not positively identified, I had very little doubt belonged to this species, passed pretty close to us near Haggerston Castle. It was flying low, and coming straight from the direction of the sea, and had all the appearance of a bird newly arrived from migration.

In August 1897, I saw an adult female, and a scarcely fledged young bird, which had been killed at the nest; the remaining young ones had, for the time being at any rate, made good their escape, and, as I never heard of their being killed afterwards, it is probable they were successfully reared by their male parent. I purposely refrain from mentioning names, or localities, but this shows that this fine summer migrant is still inclined to stay and nest with us, and it would undoubtedly do so more frequently if only a little protection were afforded it.

COMMON BUZZARD. *Buteo vulgaris*, Leach.

This is another species which is too seldom seen in the district, and which, when it does occur, receives but short shrift from our gamekeepers. In the spring of 1897, one was taken in a trap, baited with an egg, and set for corbies,

in a small runner of water, by the side of the road, near Chillingham Park; and so little was the poor Buzzard appreciated by its destroyer, that when he came upon it, all draggled and wet, flapping about in the shallow water, he mistook it for an owl, and merely knocked off its head with his stick, and allowed it to lie where it was for a fortnight, until Spraggan, the head-keeper, found it (still in the trap) and recognised it, but it was then, of course, in an advanced state of decay.

I saw a very beautifully marked young Buzzard in the hands of Mr Robert Duncan of Newcastle, which had been shot on 12th August 1899, on the Allendale Moors, west of Hexham.

ROUGH-LEGGED BUZZARD. *Buteo lagopus* (J. F. Gmelin.)

One was killed near Harbottle, in the end of December 1898, and another at South Hazelrigg, two or three weeks later. The first of these was one of the smallest specimens I have seen; both appeared to be young birds. On 18th October 1898, a rather unusually pale coloured specimen was shot near Backworth; and I saw a beautiful male, which had been killed at Unthank on 18th November of the same year.

In the shop of Mr Robert Duncan, Newcastle, I saw an adult female, a very dark coloured bird, which had been received by him from Alnwick, on 9th November 1899. In its stomach, he told me with regret, he had found the remains of an old cock grouse, the first time during his long experience that he had ever proved, in this manner, a member of the Buzzard family to have been recently dining upon game, and he added that, after all, the grouse might have been a dead or wounded bird, which the Buzzard had picked up. This not improbable excuse will, however, I am afraid, hardly be accepted as conclusive by the game preserver, who will rather be inclined to ask, with Shakespeare,

“ Who finds the Partridge in the Puttock's nest,
But may imagine how the bird was dead,
Although the Kite soar with unblooded beak ? ”

I have seen a Rough-legged Buzzard make determined, though unsuccessful, attempts at wood pigeons, as these birds were coming in to roost, in a plantation, at night. The stoops were always made at sitting birds, no attention being paid to those flying around, and very little attempt was made to follow when the pigeon took to flight. After each unsuccessful stoop the Buzzard retired to the edge of the wood, to rest for a few minutes on the top of a wall, apparently with the intention of allowing the pigeons to settle again before having another try at them. Although I watched this performance go on for half an hour at a time, on several successive evenings, I never saw a capture effected; but, from the resolute manner in which the operations were conducted, the Buzzard had evidently a strong belief in his ultimate success.

HEN HARRIER. *Circus cyaneus* (Linn.)

This fine species has, I regret to say, been growing extremely scarce in the district for many years past, and is now but seldom seen.

On 10th January 1898, one, in the plumage of the ringtail, passed me near Murton White House. It was heading almost due south, and flying very close to the ground, in the face of a strong wind, which was blowing at the time. Dr Stuart informed me that, a short time previous to this, a Hen Harrier was seen at Billie Mire, near Chirnside, and "received a round of shots from a shooting party, but managed to escape."

I recently saw, in Newcastle, a fine adult male, which had been killed at Benton, in 1880, and an adult female, shot at Hepple Woodside, Northumberland, on the 29th March 1899.

RAVEN. *Corvus corax*, Linn.

In the autumn of 1897, a pair of Ravens appeared on the Detchant moors, and remained for several weeks. Curiously enough, and as if setting up a claim to ancient ownership, their chief haunt was about "Raven's Crag," a not very

high ridge of rock upon the crest of the moor, and probably an old nesting station of the species. Unfortunately the female was trapped, by one of the keepers, on 22nd October, a beautiful bird, in perfect plumage, and weighing 47½ ozs., when she came into my possession, two days later. The survivor continued to frequent the place until the following spring.

In the autumn of 1898, a solitary Raven appeared upon the Eglingham and Harehope moors, where, as a stranger, it attracted much attention. It was finally shot by James Rough, about the beginning of November; he had observed that it was in the habit of visiting, every morning, an old tree stump near the Ditchburn march, and he accordingly laid in wait, and shot it one morning, as it flew to its perch, just after daybreak.

GOLDFINCH. *Carduelis elegans*, Stephens.

This pretty bird seems to be holding its own in the district, and may perhaps even be increasing. On 4th January 1899, I noticed one frequenting a plantation near Felkington, where, though only one bird was seen, it was scarcely likely to be alone. Mr Murdie saw one at Heiferlaw Bank, near Alnwick, on 17th June in the same year, which, he informs me, is the only one he has ever noticed there during summer. On 30th November following I saw two, feeding on thistle seed, on the banks of the Breamish, at Beanley; and Captain Norman tells me that one was seen, near Berwick, on 3rd February last.

At the meeting of the Club, in Redewater, in 1898, I mentioned that I had seen a pair near Otterburn, on 14th July of that year, which, from their actions, and the season of the year, were no doubt nesting in the vicinity.

WRYNECK. *Lynx torquilla*, Linn.

With the stream of Pied Flycatchers, and other commoner migrants, which reached us on 10th May 1899, there were at least two or three specimens of that much rarer bird, the Wryneck. Indeed, the first living example of this species,

which I have ever had the good fortune to see at large in Northumberland, was observed towards the close of that afternoon, in the grounds at Haggerston Castle. I had walked, with my boy, up the side of the Lowe, in order to show him the Pied Flycatchers, and was astonished to see a Wryneck fly from a small bush on the grass, close to us. For a long time it was quietly hopping about the trees within a few yards of us, but it had evidently lost its bearings, and appeared to be chiefly intent upon finding a suitable roosting place. It edged itself closely in against the trunk of an oak, where there was a splintered limb, and although disturbed several times, always returned to the same spot; and, as dusk was setting in before we left, it would no doubt pass the night there. It was an object of much curiosity to a Great Tit, a Chaffinch, and a pair of Willow Wrens, who all made a very close inspection of it, and unmistakably demonstrated their astonishment at meeting with a Wryneck in their accustomed haunts. That the Tit and the Finch should regard it as a stranger was perhaps not unnatural, but the Willow Wrens' surprise seemed less justifiable, seeing that they could not themselves have been settled here for more than a few weeks, and had probably encountered Wrynecks before on their travels; in spite of that, however, they were evidently as much surprised as the others to meet with one, so unexpectedly, in Northumberland. Most curiously, as it happened, upon the same day that we saw the Wryneck at Haggerston, a man, driving a cart, picked up a specimen, lying dead, by the roadside at Lickar Dene, only about two miles away as the crow flies, and, being at a loss to know what the bird was, he fortunately preserved it, and it is now in my collection. It was quite fresh when found, and had not apparently been dead for more than a few hours, though there was nothing to show the cause of its death.

Mr John Wilson, of Chapel Hill, very kindly wrote to tell me of a Wryneck, which was found beneath the telegraph wires, against which it was supposed to have killed itself, near Cockburnspath Station, on 13th May 1899. It was sent to Edinburgh for preservation, and was in the possession of Mr Turner, carpenter, Cockburnspath.

GREAT SPOTTED WOODPECKER. *Dendrocopus major* (Linn.)

Has of late become well established in the district, but a passing reference may be made to one which appeared in a garden in Castle Terrace, Berwick, in February 1898. On 13th October, in the same year, an immature bird, with red crown, was shot on the Heugh, at Holy Island, where two or three others were seen about the same time.

When passing Kyloe Wood, in the beginning of May last, I had considerable difficulty in persuading a young friend, who was with me, that the loud reverberating rattle—which at once arrested his attention—was, in reality, only the love-call of a male Woodpecker to his mate. This noise, which results from very rapid hammerings with the bill, is a peculiar sound, with a certain weirdness about it, which once heard is not likely to be forgotten, and which can hardly fail to set one wondering how a bird is able to produce it.

TURTLE DOVE. *Turtur communis*, Selby.

During the first week of November 1897, an adult male was shot at, in the Hope Nurseries, Berwick, and, being only slightly wounded, was kept alive in a cage for several weeks afterwards. When I saw it, about the end of November, it had become so tame that it had begun to coo a little, but it did not survive the winter.

PALLAS'S SAND GROUSE. *Syrrhaptes paradoxus* (Pallas.)

About the middle of May 1899, a bird, which, from the accurate descriptions given, could have been nothing else than a Sand Grouse, was seen by two different people on Holy Island. This was during the stream of migration which, as already noticed, took place about the 12th May, and, as the bird allowed of an approach to within a few yards, a mistake in identification was scarcely possible. Moreover, as tending to confirm this record, it may be worth while pointing out that the late Mr John Cordeaux, in *The Naturalist* for June 1899, makes mention of a visitation of Sand Grouse to the Lincolnshire Wolds, from the end of

February to 25th March in that year, where also a single bird was seen on 13th May, and another on 19th of the same month.

BLACK GROUSE. *Tetrao Tetrix*, Linn.

In 1898, I got a most interesting example of a Greyhen assuming the male dress, which was killed near Chillingham. The breast and under parts were very black, but there was a good deal of dark brown freckling upon some of the feathers, especially about the flanks; the black upon the neck, and part of the back, was full and glossy, and the comb over the eye was as bright and large as in a male.

DOTTEREL. *Eudromias morinellus* (Linn.)

I saw a beautiful specimen which had been shot at Cullercoats, on 25th June 1898, and several were killed about the same time on Newbiggin Moor, their skins being sent to Newcastle for fly-dressing. One was picked up, near Beal, in July 1899.

SNIPE. *Gallinago caelestis* (Frenzel.)

On 24th November 1898, I examined a very dark coloured Snipe, which had been brought in by a local shooter, some days before, to one of the game shops in Berwick. All the upper parts, and especially the rump and tail-coverts, were very dark, but the lower parts were white as usual. It was unfortunately too much damaged to be worth preserving.

On 2nd November 1898, during the prevalence of a very high south-westerly wind, I flushed a wisp of 16 Snipe from the rocks, near low-water mark, on Holy Island. There were at the same time upon the rocks, five Field Fares, about a dozen Snow Buntings, and several Larks and Grey-backed Crows, all of which had no doubt just arrived from over the sea.

RUFF. Machetes pugnax (Linn.)

In a game shop in Berwick, on 14th September 1896, I saw two immature birds, male and female, which had been received from Fenham that morning. The late Mr H. T. Morton showed me a young Ruff, which had been shot on the moors near Ray, in October 1882. I saw another immature bird shot by Lord Francis Osborne, near Ord House, on 3rd October 1898; when found, it was sitting alone upon a stubble field, and appeared loath to fly away.

While bicycling along a road in the parish of Whitsome, on 25th September 1899, I disturbed a young Ruff from the margin of a pond by the roadside. It was much tamer than some Pewits, which were in its company, and, though five or six times disturbed, it always returned to the pond after flying round once or twice. On consulting Blackadder's map of Berwickshire, after returning home, I was rather surprised to find that the farm on which the pond is situated was called Reevelaw, a rather curious co-incidence.

In October 1899, I presented to the Berwick Museum an immature specimen, which had been killed at Holy Island on the 17th of that month. Adults are more uncommon with us than young birds; but two Ruffs, and a Reeve, which still retained a good deal of their summer plumage, were shot by the late Mr Robert F. Boyd, on a marshy field at Broomhouse, in the parish of Ancroft, a few years ago.

GREEN SANDPIPER. *Totanus ochropus* (Linn.)

Although the majority of these birds only pay us a passing visit in August and September, individuals may occasionally be met with in the district, in almost every month of the year. They seem well able to withstand our hardest winters, and frost has little effect upon them. I presented to the Berwick Museum an adult, in full winter plumage, which was shot by my brother, on the banks of the Breamish, at Beanley, on 1st January 1900, and which, notwithstanding the hard weather prevailing at the time, was excessively fat. For many years past I have occasionally noticed one or two Green Sandpipers wintering in that

locality, a favourite feeding ground being by the sides of the Powburn, where it passes Hedgeley. On 7th December 1899, I flushed a specimen on the links at Cheswick Cottage; on 31st July 1896, one was feeding by the side of the Whitadder, at Canties' Bridge; and another was seen on the Lowe, near Beal, on 18th November 1897.

KNOT. *Tringa canutus*, Linn.

On 13th January 1898, I was agreeably surprised to receive a very fine specimen of this bird, which had already assumed nearly three-quarters of its breeding plumage. It had been shot upon the slakes, at Fenham, on the previous day. The mildness of the season, in the early spring of that year, will be remembered, but still it was very soon for this bird to be changing into its summer dress.

SPOTTED CRAKE. *Porzana maruetta* (Leach.)

My brother shot one on Yarrow Slake on 15th October 1896, and another was killed on the Tweed, not far from the same place, on 28th September 1898.

WHITE-FRONTED GOOSE. *Anser albifrons* (Scopoli.)

I purchased for my collection a nice specimen of this goose, which had been shot near Newton-by-the-Sea, on 9th October 1898. It is only at uncertain intervals that this species seems to visit us.

BERNACLE GOOSE. *Bernicla leucopsis* (Bechstein.)

Of late years this species has shown a disposition to visit the neighbourhood of Holy Island, with considerably more regularity than used formerly to be the case. On 2nd October 1897, one was killed out of a flock of thirteen or fourteen, and on the 10th of the same month, in the following year, four were shot with a punt gun out of a flock of about twenty, which had appeared that day on the slake;

two of these came into my possession. Most of those which remained, left the locality within a day or two, but we had frequent opportunities of seeing a single specimen, which loitered about the mouth of the Beal Lowe up till the beginning of November.

On 6th October 1899, two more Bernacles were shot at Holy Island, and, in the early morning of 27th November following, a flock of about twenty individuals, which were coming up from the direction of the sea, passed over my head near Beal railway station.

BEAN GOOSE. *Anser segetum* (J. F. Gmelin.)

Small parties of wild geese occasionally take to roosting on Yarrow Haugh, just above Tweedmouth railway bridge, and all those killed there, which have come under my notice, have proved to belong to this species. Coming to the slake late in the evening, and leaving again, to feed on the fields inland, in early morning, they are seldom seen during daylight, and seem thus to escape the attention of local shooters. One was killed there in 1896, and another—one of four which had frequented the place for several weeks—was brought to me on 17th December 1898, having been shot early that morning. It was a large bird, in adult plumage, and turned the scales at a little over eight pounds. Two, which were sent to Berwick, on 11th February 1899, had been killed near Fenham, and were immature birds, the heaviest weighing seven and a half pounds.

BITTERN. *Botaurus stellaris* (Linn.)

One evening, about the beginning of January 1898, a Bittern flew into the face of a man, who was walking along the road, in the dark, near Oxford, in the parish of Ancroft, and was struck down and secured after a short scrimmage. I saw it shortly after it had been set up. On 5th December in the same year, Mr J. de C. Paynter, of Alnwick, purchased one, which had been picked up alive, but in a disabled state, close to that town, having, as was supposed, come in contact with the telegraph wires.

Shortly before the hard weather of the present winter set in, a large number of Bitterns reached this country, the greater number being, as usual, reported from the south of England. In our own district one was killed, by a duck shooter, who was waiting for the flight, at Beal Point, on the evening of 14th December. Another example was killed, under similar circumstances, on or about the 12th of the same month, on the shores of Budle Bay. The good-wife of the man who shot the latter bird "didna knaw rightly what te di wi' sic an' a strange beast," and so they ate it! The wings, however, were preserved as ornaments for a hat, and so served the purposes of identification. "It wasna sic bad eating outhur," I was informed, "but tarble sma' i' the body, and maistlies a' legs an' neck."

Another Bittern was caught alive in the back yard of a house at Cullercoats, on the 30th or 31st of December last.

BLACK-THROATED DIVER. *Colymbus arcticus*, Linn.

Is far from common in the neighbourhood of Berwick. On 4th February 1899, I saw an adult, in winter plumage, which had been shot on the Tweed, near New Water Haugh, where it was in company with a young Red-throated Diver, which was killed at the same time.

CORMORANT. *Phalacrocorax cabro* (Linn.)

Cormorants have, during recent years, very greatly increased in numbers about the mouth of the Tweed, where they may be met with nearly all the year round. They must no doubt devour considerable numbers of young *salmonidæ*, while these are descending the river, but flat-fish form a very favourite food. The increase, so far as the Tweed is concerned, only began to become marked about the end of 1895. On 17th March 1897, there is a note in my diary that I had counted no less than seventeen Cormorants that morning, sitting together, on the rocks behind the pier, drying their wings. I have, since that date, frequently seen even larger congregations there, and along the rocks to the north, as well as up the river, two or three birds together

may generally be found; they may also be seen flying over the town at almost any hour of the day during winter. Of late, too, they have become not unfamiliar objects in the windows of the game shops in the town, a position of honour I never knew one to occupy till three years ago.

GREEN CORMORANT. *Phalacrocorax graculus* (Linn.)

This bird seems also to be on the increase to the south of the Tweed. They have always bred on the Berwickshire coast, about St. Abb's Head, and a pair have frequently nested on the Farne Islands; but until recent years the Shag has always been a comparatively rare bird upon the Northumberland coast, or nearer to Berwick than about Eyemouth, and it is not yet by any means commonly met with.

On 17th March 1897, I saw a party of six of these birds on the rocks just north of Berwick, which are the only ones I ever remember to have met with within the borough itself. On 6th September of that year, there were a good many both old and young birds about the Farne Islands, where, on 12th May last, Mr Paynter counted no fewer than fifteen or sixteen pairs, though not more than one or two of these remained to breed there.

BLACK TERN. *Hydrochelidon nigra* (Linn.)

On 24th October 1897 I purchased an immature specimen of this bird which had been shot, only a few hours previously, on the Tweed near Berwick.

Birds in Edinburgh. By JAMES SMAIL, F.S.A. (Scot.),
Edinburgh, President.

It may interest members to know that Edinburgh harbours a large number of birds; indeed, I do not know of any city of equal size in which birds are so numerous and varied, and within the past twenty years they have largely increased in number. This is so far accounted for by the widespread extension in the buildings of the city within that period, together with their accompaniment of surrounding shrubberies and cover—the abode of the birds. Blackbirds are excessively numerous, the Song Thrush is plentiful, and the Warbler tribe is well represented. Magpies are shy birds, but their peculiar chatter is often heard, and the birds are frequently seen within the precincts of the Burgh. For several years I have, within these same precincts, known the nests of Magpies—sometimes only one nest in a season—but two years ago I knew three nests. At one place, where they have regularly nested for some years, they are so well protected that the birds show very little shyness, and fly here and there in the neighbourhood of their nests without any apparent fear. The Brown or Wood Owls also nest in the same locality, and their hooting is a familiar sound to those who inhabit the houses near their abode. I may mention that the property where the Magpies and Owls referred to nest, belongs to a friend of mine, and that, for obvious reasons, I do not name the place. He is a liberal feeder of many wild birds, and his finely sheltered grounds are, in spring and summer, almost alive with song-birds, which nest there in large numbers.

In times of long-continued hard frost, Gulls of various kinds have for the last three or four winters, and in vast numbers, daily frequented the gardens of the higher-lying parts of the city, in search of food. This is something new

on the part of these birds. They arrive at dawn, and fly hither and thither to within an hour or so of sundown, when they leave.

There are a considerable number of small rookeries in Edinburgh, some of them very old.

[Magpies may very often be seen in the Botanical Gardens, Edinburgh, and I saw two nests there in 1899, the young of which were fledged, and frequenting the trees on the east of the gardens, their tameness (in contrast to their country cousins) being most striking. In reference to the Gulls having of recent years begun to frequent Edinburgh in hard weather, it may be interesting to note that the same thing applies to Berwick. Prior to 1892 I never saw a Gull on our streets, nor in gardens in the town; but when the hard frosts of February of that year were at their height (and the thermometer, it will be remembered, fell considerably below zero on several occasions) a few Gulls began to appear, hawking about the streets, particularly in such wide places as the top of Castlegate, and in the more open parts of the Greens. These were, almost without exception, Black-headed Gulls. In February 1895, however, when we had again a very low temperature, and a long continuance of hard weather, the Black-heads were usually accompanied by Common Gulls, and occasionally even by *Larus argentatus*, many of the latter going regularly at breakfast time to be fed in gardens in Castle Terrace. The habit thus acquired very quickly *caught on*, and it may now be said to be quite an established custom that, as soon as we have a day or two's hard weather, our streets and gardens in the town will be besieged by flocks of Black-headed Gulls, and the more open places, like Castle Terrace and Bank Hill, visited also by Herring Gulls. During the last severe snowstorm, dozens of Black-headed Gulls came regularly to be fed with the small birds in front of our windows, while it was quite a common sight to see long rows of them sitting upon the roofs of houses, or dipping into the streets to secure any scraps or offal thrown out.—G.B.]

A Brood of Long-tailed Tits. By JAMES SMAIL,
F.S.A. (Scot.), Edinburgh, President.

MACGILLIVRAY says, "I have seen a nest in which were sixteen young ones." In Rule Water valley, in Duncan's Hollow, I once saw a brood of Long-tailed Tits, numbering fourteen. They had newly left the nest, and they were all perched side by side, and as close as they could possibly sit, on a horizontal twig in the centre of an old hawthorn tree. They seemed sleeping, and were evidently resting. At the first glance I could not make out what they were; they looked like a roll of feathers, of about a foot in length, stuck on to the branch. I noticed that they were sitting, to use a homely phrase, heads-and-thraws. I cut the small branch on which they sat, and quietly withdrew it from the tree. When this took place, eleven of the younglings fluttered on to the grass, but three of them steadily held their seats till I carried them to the house where I was staying, and back—a short distance, however. When I took them back I found the parent birds excited and busy, attending to the wants of the others, and my three small long-tails were joyously received.

Lesser Fork-beard, or Tadpole Fish. *Raniceps trifurcatus*
(Turton.) By GEORGE BOLAM, F.Z.S.

Two specimens of this rare fish occurred in the spring of 1899. The first was caught by a line boat off Berwick, on 22nd February, the other about a month later, and both were exhibited in Mr Holmes' shop, in Bridge Street, the first mentioned afterwards finding its way into our Museum.

When I examined the specimen caught in February, a few hours after it had been landed, it was of a dark rich brown colour, deepening almost to black, the white skin of the inside of the lips and gill-coverts showing most vividly where exposed; underneath it was rather paler in colour. It measured $10\frac{1}{2}$ inches in extreme length, and across the thickest part of the body, just behind the head, about $2\frac{1}{2}$ inches, as it lay. It was in plump condition, hard to the touch. The curious ventral fins (if fins they can be called) were very small, and the slender thread-like rays issuing from them were quite white. The fish being fresh when I saw it, the tubercles were not visible.

The second specimen was slightly less than the first, but was otherwise similar. The late Dr George Johnston recorded a Tadpole fish from Berwick, in 1832, and the sketch of it, which he forwarded to Yarrell, and which is given in the latter's "British Fishes" (Vol. II., p. 208), is much better than the plate given in Dr F. Day's work.

Notes from Garden and Field. By CHARLES STUART,
M.D., Chirnside.

As the winter passes into spring, and a start into growth is made by early flowering plants and bulbs, it is remarkable—among plant lovers—how the old interest in the progress of vegetation is revived.

Previous to Christmas 1899, a certain amount of frost and snow had been the rule, the weather being very unsettled. In the fresh intervals, it was curious to remark the start into growth made by bulbs of the *Narcissus* family in making the ground crack, in the lines in which they were planted, and presently to see the green leaves peeping through the ground. No plant stands the frost better than the Daffodil, while dry sunny weather is its greatest enemy. To persons who consider a wild garden with endless varieties of plants, before formal bedding, it is possible to have a succession of flowering subjects in the open during every month of the year.

The winter of 1898-9 was a very fresh one, and there was a succession of Crocuses (*Croci*) from September till Christmas, when the lovely *Crocus imperati* was in flower during several weeks, and on New Year's Day (1899) was in perfection. This season, with more frost in the ground, it did not display its buff striped exterior, with delicate lilac interior, till the 16th January 1900. *Crocus speciosus* is the first of the family which flowers, in autumn; and a bed of it, of some years standing, with brilliant blue colour—the stamina bright scarlet—when the sun is shining, is a sight no one who has seen it will forget.

Helleborus maximus, the large Christmas rose, was in fine flower from November till Christmas, on which day a bouquet of it, gathered from among snow and ice, revived on being placed in water, and furnished a seasonable posy. The Continental Hybrid varieties succeed this grand plant, and in fresh weather are not to be despised for cutting for the house. To preserve them indoors, split the stems into four for two or three inches up, and place them in a bowl of tepid water, floating flowers and foliage on their backs.

In this way these blooms will last a fortnight. Without any protection whatever, a dozen different varieties were in flower, in the open border, on 25th January. The winter Heliotrope, *Tussilago fragrans*, with its almondy perfume, was opening. The *Helleborus foetidus*, a British plant, was also showing its greenish blooms. With slight protection, many plants from November flowered profusely.

Saxifraga fortunei, a most interesting Chinese form—sent to this country by a distinguished Berwickshire man, and named after him—flowered in November and December. It makes a striking pot plant, with its long feathery plumes of flowers, keeping well above the foliage. Kept outside all the summer, and put into a cold frame in October, it sends up half a dozen flower spikes, which are most attractive, and the plant anyone can grow.

The Afghan Lily, *Schizostylis coccinea*, is another subject which requires a little protection. Planted out all the summer, it may be potted up in October, and placed in a cold frame; it will flower till Christmas, and later. Out of doors, in Berwickshire, it is unsatisfactory. It forms a very bright bit of scarlet colour, when flowers are scarce. *Tritileia uniflora*, treated in the same way, makes a good winter flowerer. It is quite hardy here, but flowers later on in spring. When a little care is taken of it, the flowers are much larger, more delicately shaded, and altogether more chaste.

The Snowdrop was just pushing through the open ground when this serious February storm came, with 19° of frost on the 7th and 8th. Vegetation has got a severe check. The larger flowered Snowdrops from Smyrna and that district of country, as well as the Grecian Islands, are most lovely subjects to grow. *Galanthus Ikarii*, from the island of Icaria, is perhaps the finest of the whole family. When grown in leaf mould and loam, in a cold frame, with no other protection, it is so delicate, the flowers so large and white, and so refined in habit, that it is sure to be cultivated when better known. *Galanthus Melvillei* is another form which resembles our garden favourite, only it is twice as large, and perfectly hardy; and when I state that its habit is perfect, I cannot say more for our *Galanthus nivalis*,

which cannot be excelled. It was raised by Mr Melville, at Dunrobin Castle. *Galanthus robustus* (Baker) is another gem, and *G. imperati* and many other forms. I may not omit, however, a most robust and elegant *Galanthus* from M. Atlas (*Galanthus whittali*), which is perhaps as early as any. *G. Elwesii*, from the Crimea, has size in its favour, and a globular form is attractive. For early spring flowers, nothing gives more satisfaction than a cold frame devoted to treasures like the *Galanthus* family, interspersed with *Cyclamen coum*, *Scilla Sibirica*, *Chionodoxa lucillie*, *Sisyrinchium* (white and lilac), *Iris stylosa*, *Iris kreilagii*, *Iris reticulata*, etc. For, after all, our spring flowers give us more pleasure than those which come later, and more in profusion.

I have endeavoured to notice a few plants incidental to the back end of the year and the early spring, and will now give a few notes on the autumnal and spring migration of birds.

The Swallow fled from our harsh climate very early this last autumn, all being gone by the 4th October; were first seen at Allanton Bridge, on the 21st April. The Swifts remained a month longer with us than usual. They generally leave with the first Lammas flood, about the 12th August; first observed about 10th May. If weather is fresh, Swallows will remain with us till the end of October, or even later. Should a sharp frost occur, as it did this past season, and no insect food to be had, they suddenly disappear.

Few of our summer migrants are seen after September. No doubt young birds remain till they are strong enough to fly a distance. The Willow Wren and Whitethroats are often seen at a late season, feeding on the remains of currants and raspberries. Frost causes many of our songsters to cross the sea to warmer quarters, as reported by the lighthouse keepers on our coasts. The Thrush is often killed by knocking itself against the lanterns of a lighthouse at night. It is remarkable, however, in this severe storm of 7th, 8th, 9th, and 10th February, with nineteen degrees of frost through the night, that this bird, in considerable numbers, is in the Eastern Borders. Taking particular

notice, I have observed at least a dozen during the last two days, about the roots of hedges and in the garden. Seeing that the Thrush lives on grubs and worms for the most part, hunger drives it, with other birds, to share the mixed food set about for the benefit of all comers. On 10th February, at the side of a small run of water, a mole was throwing up the soil, and a Thrush was sitting watching the operation, and catching the worms as thrown up! The hedge bottoms are rarely so hard as to prevent Blackbirds and Thrushes from getting some of their usual food by scraping and scratching. Berwickshire is so well furnished with old hedges that the birds just mentioned are rarely entirely absent, although the lighthouse keepers report that both are seen in flocks at their lanterns on migration.

The Green Plover, in countless numbers, is seen during autumn and early winter, when the weather is fresh, flying about the crofts in this district. It is difficult to name a more interesting sight than a flock of at least a thousand going through their aerial evolutions, in bright sunshine. I never tire of watching these. Last season (1888-9) they never left the district. This season, just before Christmas, they left in a body; and although small packs were seen at the breaking up of the first storm, their numbers were never great. None have been seen during the present frost. Before migrating to the mud flats of Holland, these beautiful birds present a most unhappy appearance, being strictly a grub-eating bird—the ground being hard, no food was to be had. I have often wondered how they increased in numbers, seeing that their nests are robbed in such a heartless manner. Now, however, they have a certain amount of preservation, as their eggs may not be abstracted after a certain date. The young were running on the roads and fields by the 10th May 1899, and how they escape from birds of prey and other enemies is marvellous; for they rush, in times of danger, to the nearest tufts of grass, and hide their heads, leaving their bodies exposed. The Green Plover must destroy an enormous amount of grubs and worms, and is perhaps the most harmless of the bird family, as well as the most elegant.

Fringilla montifringilla.—The Brambling, or Mountain Finch, is one of our most interesting winter visitants. It arrives, in twos and threes, about the end of October most regularly. By the 12th November the main body appears at the same places every year. A beech wood, with the mast falling, seems the attraction. Near my house a flock of at least three hundred have frequented a grove of beech trees in process of being cut down. The cutters, with carts and horses, are there every day. The Mountain Finch is a shy bird, but continued to feed till the 10th February of the present year, when, having consumed all the mast, they made off to the stackyards, where there is a good supply of grain, on which they also feed. Before a storm it is a pretty sight to observe them fluttering along in a pack, with the white feathers about the tail and wings making them very conspicuous. They seem well spread over the district, and often are associated with Chaffinches and Greenfinches.

The Snow Bunting, *Plectrophenax nivalis*. Snowfleck, or Lesser Mountain Finch, is also an interesting winter visitant, although never very plentiful in the Eastern Borders. It usually is observed where sheep are artificially fed with bog hay. There it feeds on the grass seeds on the hay, and generally before or during a snowstorm. In winter it has patches of white about its tail and wings, brown over the back, and its legs and feet are jet black, as if they had been varnished. It has an undulating flight, and a peculiar tinkling call. When it alights it runs along the ground, like a partridge. The plumage of this bird is whiter in summer. In Sutherlandshire I have observed them at that season nearly white. The hind claw is like the Lark, lengthened, and nearly straight. I had a specimen in my hand, at West Foulden, on 5th February, shot out of a family of eight, which were feeding on grass seeds laid down with hay for the sheep.

The Black-headed Bunting, *Emberiza schæniclus*, seems to be with us all the year through, many being seen about stacks at the present time. The male is a very attractive bird, with his black poll and white ring round his neck. The female is also very pretty, the markings on the breast and the rich coloured brown back being very conspicuous.

This bird likes to be near water, hence a name Reed Bunting sometimes given to it. It builds near or on the ground, and can hardly be called a migrant.

Dendrocopus major, the Great Spotted Woodpecker, has nested in two places in Duns Castle Woods during last season, brought up the young birds, which have flown, and will do well. Although a true migrant from Scandinavia, these birds remain all the year round at Duns Castle, Langton, and Longformacus. Last October I observed one busily feeding in the strip of wood by the roadside between Tempest Bank and the Free Church at Allanton. That these birds frequent the woods about that neighbourhood is easily seen, as the dead branches (particularly of the oaks) are entirely denuded of the dead bark, which they effect in search of insects. A considerable flight and migration had reached the north and east coasts of the kingdom, reports of their arrival being sent from Tongue, in Sutherland, to our own coasts. There is little doubt that a colony has established itself between Carlisle and the Eastern Borders. They nest in the month of June.

The Pied Flycatcher is a rare visitant to the Eastern Borders; but a flight had evidently reached our coast, for specimens were reported from Dunbar, St. Abbs, Whitecross, and Coldingham, on the 15th May 1899. More inland, Mr Ferguson reports the presence of a pair at Duns Castle Loch. I have seen them on three different occasions in this parish, in different years. They are not, however, seen every year.

The Dipper, *Cinclus aquaticus*, is plentiful about every bridge on the Whitadder. To watch him at the side of a stream, go flop overhead, and emerge a considerable distance farther down a rough stream (for this bird walks on his feet under water) with his mouth full of larvæ, is a curious sight. In December, perched on a stone, one is astonished to hear the very pretty, sweet song, uncommon at that season; and, on closer inspection, the little black bird, with white patch and ring, is seen whisking his tail up and down, and bobbing most politely to his mate.

Alcedo ispida.—The Kingfisher is always about the river bank at Ninewells. On a sunny day, with plumage well

displayed, it passes the bystander like a flash of light. It occasionally is seen at all the bridges, the Kebby Burn, Allanton, and by several of the small rivulets flowing into the Tweed at the Union Bridge.

On the 13th June an Albino Skylark was taken from a nest at West Foulden, by the shepherd, the other inmates of the nest being of the usual colour. In former years I saw a milk-white Lark in a flock of the ordinary colour, on the same farm.

Saxicola oenanthe.—The Wheatear is among our earliest spring migrants, and is sometimes seen here as early as 30th March.

Emberiza miliaria, the Corn Bunting. For many years I only knew of two stations for the Corn Bunting—Mayfield, Auchencrow, and Canty's Bridge. Now, like the Starling, this jolly, well-fed looking bird is to be seen sitting on the topmost twig of the hedges, uttering its peculiar unmusical note, in many places in this district. It is in some degree migratory, and its motions are very interesting. It nests about the beginning of May, on or near the ground, at the side of a tuft of grass, or at the hedge root. After rearing its young, it passes the summer till the ripening of the grain, when, surprising to relate, the young broods and their parents migrate to the south. We see nothing more of them till late in the autumn, when there is an accession from the north, and unless the weather is severe, they remain all winter in flocks, with Chaffinches, Yellow Hammers, and Bramblings. However, they are sometimes awanting, and new colonies come from the north, so that there seems to be a continual coming and going. I have seen them as far north as Thurso, sitting on the telegraph wires, and at the time considered that the stream of birds came from Norway and Sweden, and travelled south as the weather became more inclement.

Carduelis elegans.—The Goldfinch is now a very rare bird in the Eastern Borders. Fifty years ago—when cultivation of the fields was not so universal, and a few thistles were spared—at Crossrig, in Hutton parish, little families of Goldfinches, five and six in number, were seen by me, clinging by their claws and scooping out the seed. Now,

the food being scarcer, it is a rare sight to see more than one at a time. Within the last three years I have observed one at Foulden, on a rough hedge bank; one at Hutton Hall Barns; and a pair at the Kebby Burn, Hutton Hall; also a friend saw one on the park wall, Foulden House. Bird catchers have told me that the Whitadder banks, between Edington Mill and Hutton Bridge—where thistles, *A. centaurea*, and burrs abound—Goldfinches are not uncommon.

The Sand Martin arrived at Allanton Bridge on 4th April; left on 4th August. Swallows on 21st April; left on 4th October. The Cuckoo arrived at Blackburn, Chirnside, on 28th April; left on 23rd June. The House Martin on 30th April; left on 20th September. The Landrail, or Cornerake, arrived at Duns Parks on 8th May; left on 1st August. Several young birds remained a month longer. *Cypselus apus*, the Swift, arrived on 5th May; left on 30th August. Three weeks later than usual, the Redstart arrived on 4th May; left on 1st August; very scarce here this season. The Whitethroat arrived on 16th May; left on 4th September, and was very plentiful here in all the wild hedges. The Willow Wren arrived on 24th April; left on 4th September.

Caprimulgus Europæus.—The Nightjar is a true migrant, and a night Swallow. It generally is seen early in May, if weather is good. With large open mouth, it flies in a furtive manner at the edges of the wood, catching moths, etc., as it moves along. It is a very shapely, handsome bird, with rich brown plumage, and the mechanism of the mouth is unique, as it opens as if on a hinge. Moths are said to fly in, but I cannot vouch for the truth of this. A keeper, who was watching at dusk to shoot me a Daubentons Bat, got a chance at the Nightjar, and shot it. I sent the specimen to Mr Eagle Clarke, at the Museum of Science and Art, which was in beautiful plumage, and few birds have so handsome a coat.

Sylvia curruca, the Lesser Whitethroat. I never got my eyes on a single specimen of this interesting bird in 1899. A wild hedge near Hutton Hall, where it was at one time to be seen, has been cut to the ground, and there was no cover. At Allanton Bridge, where I had opportunities of

watching this, the same thing has happened. The snow-berry bushes and hedges have all been cut down. I was too near the bird on many occasions to have made any mistake as to its identity. Mr Smail, our late President, informed me that he knew the bird quite well in the Earlstoun and Jedburgh districts. It has been seen at Berwick, and, in favourable seasons, I am sure that eventually some other observer will confirm my report as to its identity. I have stood below the tree upon which it was singing, and listened to its song, which is exceedingly sweet. Its mate was in a nest not far off, although I did not succeed in finding it. A night singer, I have heard it at 11 p.m., and again at 2 a.m., in passing in my conveyance when out on duty. In colour, it is much lighter along the breast and abdomen than the Common Whitethroat, and a softer grey colour over the back, and seemed rather longer in shape than the common form. One could hardly mistake it for the Sedge Warbler, which is also a night singer. It would be impossible, I should suppose, to mistake the birds, which differ entirely in appearance. The shyness is remarkable, for it likes to be in a position where a short flight would remove it from all danger. The high wall which surrounds the grounds at Blackadder was within thirty yards of where it was nesting.

Motacillide.—The Wagtails are very plentiful by the rivers, from early spring. The Grey Wagtail (*M. melanope*) remains, in mild weather, with us all winter. *M. raii* is occasionally seen, as also the Pied Wagtail (*M. lugubris*), generally about the end of April.

At Whitehall, the garden entrance to Ninewells, and along the beautifully wooded banks of the Whitadder to Chirnside Bridge, the following birds are rarely absent during the early weeks of June:—*Phylloscopus rufus*, the Chiff-chaff; *Regulus cristatus*, the Goldcrest; *Sylvia hortensis*, the Garden Warbler; *Sylvia atricapilla*, the Blackcap (10th May); *Phylloscopus trochilus*, the Willow Wren. The Chiff-chaff is one of our earliest arrivals, sometimes as early as the 30th March, and remains till September. The others are later in appearing, but their notes are best heard in the early weeks of June, when they are busy nesting.

Although the Nightingale is never heard in Scotland, the Blackcap is no bad substitute. In fine weather the notes of this bird are singularly sweet and well modulated, and lead the listener to the tree upon which it is singing. The notes of the Garden Warbler are often heard associated with those of the Blackcap, and the concert of birds to be heard at the garden entrance of Ninewells, on a summer morning, is not easily forgotten.

The spring of 1899 was most unseasonably cold and wet, acting as a damper on the song birds. There was a want of unanimity in their notes, not the fine concert we sometimes hear early in a spring morning, when—in a spruce grove—every bird, frequenting its protection, seems to be singing at the same time. Everyone must be familiar with the notes of the Thrush and the Blackbird; how well they accord. The Thrush with its high, well modulated song; the Blackbird with its mellow contralto.

In conclusion, *Parus caudatus*, the Long-tailed Tit, is rarely absent from our parish at Chirnside. It is perhaps the most singular in appearance of any of its relations. It is generally seen in winter, in families of a dozen or more. With its peculiar note, flying along the tops of the trees in search of food, hanging head downwards by its claws, no more curious sight can be imagined. It is not very shy when feeding, as I have stood under the trees and watched the proceedings of the colony without causing alarm. It builds a dome-shaped nest, with sometimes two holes in the sides, and the construction is a marvel of skill. Bewick asserts that the hen occupies the nest when incubating, with head inside; while the male bird feeds his mate, and sits with his head turned outside, to make the earliest exit in the morning, in search of food! There was a large colony of these birds at Billie Brae (parish of Coldingham) seen by me in December, and at Harelaw Quarry spruce wood they are often seen.

Country Bird Rhymes. By the PRESIDENT.

I.—ENGLISH.

MORN and eve the winter long,
 You may hear the dipper's song,
 Soft and gentle, sweet and clear;
 Hearken if you wish to hear.

O to hear the linnet
 Start his morning song;
 If he but begin it,
 All the feathered throng
 Listen for a minute,
 Then break out in song.

When the sedge bird in the thorn
 Tells the sleepy world his care,
 When the beetle blows his horn,
 As he cleaves the balmy air,
 Shrew and mouse begin to quake,
 For they know the hour is come
 When the hungry owls awake,
 Hunt, and clutch, and bear them home.

What time bright April's growing old,
 And furze puts on its robe of gold,
 The first cuckoo her presence tells,
 And breaks the silence on the fells;
 And they who do not joy to hear
 Find little joy throughout the year.

Welcome is the corncrake's call,
 Though so rough and same withal;
 When it falls upon the ear,
 Who that hears it would not hear?

Cushats gently cooing in the lonely wood
 Tell of rest unbroken, peace, and solitude:
 Cushats on the corn lands crowding, cramming aye,
 Tell how rest has vanished, peace has flown away.

II.—SCOTS.

Wheety-why the whitethroat
Dances when he sings,
Ower the brier and bramble,
Hoverin' on his wings;
Haud his tongue he canna,
Singin' is his flam;
A' the country laddies
Ca' him Bletherin' Tam.

Merry water wagtails,
A' the bairnies know
How yer tails' wag-waggin'
Gars the burnies flow;
And how wicked kelpies
Tell the frettin' linn
If ye stop the waggin'
Burnies winna rin.

Cheerily 'mang ice and snaw
Sings the bobbin' water-craw;
Feeble though his sang may be,
There's a charm for you and me.

CORNCRAKE.

When the corncrake from the plain
Pipes his glad return again,
All rejoice again to hear
Summer's faithful pioneer.
When he first begins his *crek*
Grassblades jimpily hide his back;
When the corn is lushy-green
He disports at will unseen;
When the fields with grain are bright
He proclaims it day and night;

When the harvest tints appear
He no longer greets the ear;
When September nears its end
He has found another land.

CUCKOO.

The following rhyme, by our Treasurer, I have extracted from the *Zoologist* (Fourth Series, Vol. II., No. 14, p. 87.) The vernacular is excellent, specially so when heard from the lips of a native, and will be appreciated by Northumbrian members.—J.S.

"In Mairch, gin ye sairch, ye may find a Cuckoo,
But it's April afore ye can hear her;
When wor weel into May, she sings night an' day,
Wi' a voice that grows clearer an' clearer.
Come in June, very soon she'll alter her tune,
An' cry kook, kook, kook, kook-coo,
Wi' a kind o' a chetter, which, gin ye come at her,
Ye'll find is the out-comes o' *two*.
By Julee, o'er the sea she's preparin' to flee,
An' man stairt, or the wether gets cader;
In August gan she must, an' her young man jist trust
To the Cheeper, until they get ader.
An' dod its gey queer, how the time o' the year
The young be ther sells can remember,
But whatsoever the cause, maist a' body knows
They'll a' be away wi' September."

G.B.

Spear-head found at Rutherford. By the PRESIDENT.

(PLATE II.)

THE drawing represented on Plate II. was obligingly sent to me by Mr Thomas Scott of Earlstoun. It very faithfully portrays an ancient bronze Spear-head, which was found by a man named John Hood, on a ploughed field near Rutherford, about the middle of May 1899.

The blade and socket measure about eight inches in length, and, except for the corrosion at the edges, the weapon is in a good state of preservation.

An Ancient Apothecary's Mortar. By the PRESIDENT.

(PLATE III.)

THE old bronze Mortar, for the drawing of which (given on Plate III.) I am indebted to Mr Adam Laing of Hawick, was presented to the Museum of the Hawick Archæological Society by the late Mr Anderson of Woodburn, in 1881. It is a very substantial vessel, and measures about eight inches in height, and one inch more in diameter at the top. The inscription reads: "Gilbert Primros, Chirvrgien, 1569." Gilbert Primros was a well-known physician in France, in the middle of the 16th century, and an ancestor of the present Earl of Rosebery.

On a Cist and other Remains discovered near Berwick.

By GEORGE BOLAM, F.Z.S.

IN the beginning of February 1898, the plough laid bare part of an ancient Stone Coffin, or Cist, in a field called "Cocklaw Hill," upon the farm of High Cocklaw, within the Berough of Berwick. In company with Captain Norman and Mr Sanderson, the tenant of the farm, I visited the place a few days after the discovery, and saw the cist *in situ*. It was composed of five large rough sandstone slabs, one on each side, and one as a cover, but had no bottom save the dry, hard clay. The inside measurements were—length, 4 feet 6 inches; width, 1 foot 11 inches; depth, 2 feet 3 inches. It lay in an east to west direction, and at a depth of about 18 inches below the then surface of the soil; but from long cultivation of the field, the original depth had no doubt been considerably encroached upon. Owing to the unequal size of the unhewn slabs, the cist was not rectangular, but was considerably widest at the east end. When opened, nothing could be found in it, unless a very small quantity of black earth may have represented remains, but this is very doubtful.

Mr Sanderson informed us that this was the third cist which he had discovered in the same field. In one of the others, some pieces of charred bone, and the fragments of a broken clay urn, were found. He had also discovered, at different times—in the same field—two querns, one of which is now in the Berwick Museum, as well as several celts; while in an adjoining field he had seen remains of what he took to be an ancient camp, or village, with traces of what seemed to be a paved road. Near the latter he had recently dug up a large, roughly-squared stone, with a neatly wrought cup running through it, tapering to the base. This we saw lying by the side of the field, and Captain Norman ventured the opinion that it might perhaps have been the base of a flag-staff.

On the Occurrence of Sphodrus leucophthalmus, Linn., in the district. By GEORGE BOLAM, F.Z.S.

A SPECIMEN of this striking-looking beetle was captured by Mr William Wallace, as it ran quickly over the pavement in front of Mr Elliot's shop in High Hill, Berwick, one evening in September 1893 or 1894, and, as it is by no means a common insect, it is desirable to place the occurrence on record. In all likelihood it had come from the cellar window, which abuts upon the street—"cellars, warehouses, and such obscure places" being the best known habitats of the species.

S. leucophthalmus is already reported for Berwick, in Mr Dunlop's list, published in Vol. II. of the Club's "History," and there was an old specimen in Dr Johnston's collection, which would probably be a local one. In the "Catalogue of the Insects of Northumberland and Durham," by the late Dr Hardy and Thomas Bold (Transactions of the Tyne-side Naturalists' Field Club, Vol. I. p. 40), the entry is:—"In cellars and warehouses, not abundant. A specimen in an outhouse at Twizell, and another in a cellar at Lucker.—P. J. Selby, Esq.—Newcastle and Long Benton." In after years Dr Hardy had a specimen which was thought to have come from a baker's premises in Duns.

Landowning in Northumberland. By the late R. G.
BOLAM, Berwick-on-Tweed.

[Reprinted from the *Newcastle Daily Journal*, 14th July 1887.]

SINCE the day when God spake unto Adam and Eve, saying: "Be fruitful, and multiply and replenish the earth, and subdue it," the desire to possess some portion of the earth's surface seems to have been the ruling passion among their descendants, whether in the form of an inordinate desire to possess the whole, as in Alexander, or in the more humble wish of the old sea captain, who only wanted a bit of land in which to stick his wooden leg, and call his own. For this end wars innumerable have deluged the world in blood, and crimes without number have been committed; for this end we find Abraham purchasing the field of Machpelah for a place in which to bury his dead; Jacob purchasing the birthright of his brother Esau; and Joseph purchasing the land of Egypt for Pharaoh; Alexander conquering the world, and sighing for other worlds to conquer; the Romans invading Britain; and, in more recent times, the Normans invading and conquering England, William promising lands and lordships both rich and plentiful to his barons and retainers; while recent events would go far to prove that the passion is still as strong in the human breast, as it was in the days of Alexander or of William the Conqueror.

As it would be impossible within the limits of the present article to deal, except very partially, with all the questions which an enquiry into "Landowning in Northumberland" opens up, it must suffice to take only a cursory view of the past, giving an illustration here and there in passing, in order to devote more attention to the changes which have taken place within the last fifty years, or during the reign of Her Most Gracious Majesty whose Jubilee we have just been celebrating.

We are told on high authority (Haydn) that agriculture was introduced into England by the Romans, A.D. 27, but

the evidence of the stone and of the flint period would lead us to believe that long before the advent of the Romans some rude form of agriculture must have been exercised by the numerous inhabitants of the land, and that districts must have been in the possession of tribes or families.

The departure of the Romans, A.D. 409, was followed by centuries of wars and invasions, race succeeding race, as they successively landed and gained a footing upon our shores, until the advent of the Normans under William the Conqueror in 1066 introduced a strong and settled government in the land, though for some generations afterwards the northern part of England remained in an unsettled and only partially conquered state.

With the Normans the military tenure was introduced into England, and William parcelled out the country among his chief barons and retainers, which grants constitute the baronies known as such throughout the country, many of which exist to this day; while of others there remains but the memory of a name, chaunted, it may be, in some old song, or told in some old legend "of the good old times"—

"In days of yore, those good and golden days
Which all who know them not so warmly praise."

—*Service Legends.*

The Doomesday Book of 1068, which remains, even in our day, as a record of the patience and industry of that age, contains a wonderful account of the lands and tenures in England in the time of the Conqueror. Unfortunately the northern extremity of the kingdom was in too unsettled a state to admit of Northumberland being included in that survey, and we have to wait the production of "The Bolden Book," by Bishop Pudsey, in 1170, and "The Testa de Nevil," (time of Henry III.) for a record of the lands and holdings in this county.

Though the county of Northumberland was not included in the Doomesday Book of 1068, and only partially subdued, William the Conqueror appears to have exercised sovereignty over it, as we find that he granted "the seignory or fran-

chise of Redesdale," and the Baronies of Alnwick, Morpeth, Mitford, Bolam, Delaval, and probably Whalton, and the Manors of Chevington and Dilston, the county being in the hands of the Crown after the death of Earl Waltheof. William Rufus granted the Barony of Bailliol. Henry I. the Baronies of Wooler, Wark, Beanley, Prudhoe, Bolbec, Emildon, Bothal, Heron, and Ellingham, and the Manors of Budle and Spindleston, Bradford and Gosforth. The Manors remaining to the Crown being Bamburgh, Newcastle, Warkworth, Rothbury, Corbridge, and Newburn, and the district of Tindale. A few small estates were held by sergeanty, and a considerable number were still possessed under the old Saxon tenure of Drengage or Theinage.

With the establishment of the military tenure and knights' service, we find in the county a mixture of Norman and Saxon customs. The Norman lords, in taking possession of their baronies, would appear to have taken over also the tenants or occupiers of land, and allowed them to continue under their old tenures. We have thus in the same district the Norman service by knights' fees alongside the old tenure of Thanage and Drengage, by which the tenants were obliged to cultivate the lord's lands, reap his harvest, etc.; the old impost of Danegeld, originally levied to bribe the Danes to leave the coast, and the Norman impost of cornage or noutgeld, and of Castle Ward by service for defence of the lord's castle. All those services were from time to time converted into money payments, rents being first paid in money A.D. 1135.

In 31 Henry 1st (1131) the profits of the County and the Royal Manors were farmed by Odard, the Sheriff, at £139 5s. 0½d., out of which had to be deducted fixed charges amounting to £10 17s. 6d. annually.

In 49 Henry 3rd (1265) the cornage paid to the Crown by the owners of the several baronies and lands amounted to £18 4s. 6d.

In the Testa de Nevil is given a full and particular account of all the lands and services in Northumberland, with the names of the possessors. From this the following extract is given regarding "the Barony of Bolbec," one of these granted by Henry I.:—

"Hugh de Bolbec held in cap. of the King, Stiford, Brumhalgh, Slaley, Shotley, Hedden-in-Wall, Hedwin, East Thornton, Whichester, Houghton, Bonwell, Eshewic, Angerton, Middleton, Moralie, Burnton, Beryll, Renwick, East Matfen, Harnham, Shafthow, Hawkswell, Kirkharle, South Middleton, Kain, Hartwayton, Hawic, Rothley, Newton Grange, moiety of Bywell. Old feoffment Of the said Hugh de Bolbec held

Gilbert de Slaley, 1 knight's fee O.F.

Wido de Arayns, Hedwyn, as 4th part of 1 knight's fee O.F.
Silille de Crawden, Wycester, Horeton, and Walington, 1 knight's fee O.F.

Richard de Benwell, moiety of Benwell, as 4th part of 1 knight's fee O.F.

Robt. de Wycheester and Henry de-la-Val, other moiety of Benwell, 4th part of 1 knight's fee new feoffments.

Eustace De-la-Val held Echwic as half a knight's fee new F.
Robt. de Ryhill and Christian, his wife, a moiety of Middleton; and

Morel and John Middleton the other moiety as 3rd part of 1 knight's fee N.F.

Otver de Insula held Thornton, Burnton, Borhill, Renwic, Matfen East, Hawkswell, and 2 carucates of land in Kirkharle as 4th part of 1 knight's fee O.F.

Heir of John Fitz Robert held Kirkharle, except above 2 caruc. as 4th of 1 fee N.F.

Alwina de Bolam and James de Calci and Alice his wife held Harnham, Shaftoe, South Middleton, Cambo, Hartwayton, Hawaic, Rothley, Newton Grange, 2 fees and one-half old feoffment.

Roger de Caldecotes and Matilda his wife, Gilbert de Harle and Mariot his wife held moiety of Bywell; 1 knight's fee old feoffment.

Robert de West Hedwyn held West Hedwyn as 3rd part of 1 knight's fee O.F.

"Socage of Bolbec."

Alan Tyson held of Hugh de Bolbec one caruc. of land in Shotley at 16s. 8d. rent.

Thos. de Black Hedley one caruc., also in Shotley, 14s. 8d. rent.

Will. Fitz Simon, 20 acres there at 40d. rent.
 Evelred, 20a. there, 40d. rent.
 Gilbert de Hedley, 40a. in Shotley, 12d. rent.
 Henry Fitz Ranulph, 56a., Shotley, 2d. rent.
 Ranulph de Morlay, 40a., Shotley, half a mark.
 Roger de Whitchester, 40a., Heddon-on-Wall, 40d. rent.
 Robert de Whitchester, 40a. land in Heddon, at 15d. rent."

And as instances of special service may also be quoted:—

"Earl Patric held in cap. of the King. Beneley, Hiddesley, Edlingham, Lemmington, Brampton, Wyton, Shipley, Harup, Stanton, Horsley, Windgates, and Ritton by inborough and out*borough service between England and Scotland."

"Will. de Callaley held Calleley and Yetlington in cap. of the King in Drengage and 30s. rent and doing Truncage (viz. carry wood) to Bamburgh Castle, he ought to pay taillage with King's tenants and Demesne and owes Herriot and Merchatt."*

From the Black Book of the Exchequer the following return is extracted (time Henry III.) from Spearman's MSS.:—

"Acknowledgment of Lands of Walter de Bolbec, 4 knights' fees and $\frac{1}{2}$ of old F. of which Gilbert de Bolam holds $2\frac{1}{2}$, Hugh de Craw-den. Will, filias Boius 1.O.F., Ota de Insula $1\frac{1}{2}$ N.F., Riginald son or Wimand $\frac{1}{2}$ a fee, John Moral and Gospatrik each $\frac{1}{3}$ rd, Wibert de Slaley 1. Total of the fees of Bolbec 5 knights' fees."

These holdings, under the great barons, would appear to have been the origin of the smaller estates, such holdings having gradually, as the services were converted into annual money payments, become freehold, and in very many instances are held as separate estates at this time, or, where merged into larger properties, preserve their own individuality as townships; and it is also a curious fact that many of these properties still pay the annual charges for castle guard, fee

* Calleley estate pays a quit rent of £1 6s. 10d. to Bamburgh Castle, in conditions of sale 1877.

farm, and other rents, one of the most peculiar of these rents existing in some of the northern baronies being called hen and capon rents, one hen and capon representing in money 3s. 3d.

In the year 1660 military tenure was abolished.

Another instance of old associations may be mentioned here—viz., that “the corfew bell,” established by William the Conqueror, still rouses the burgesses of Berwick-on-Tweed at 5 a.m., and at 8 p.m. reminds them that another day has passed away.

Names of the gentry of Northumberland returned by the Commissioners in the 12th year of King Henry VI. (1433):—

Thomas, Bishop of Durham	} Commissioners to take the oath.
Ra. Earl of Westmorland	
Tho. Lilburne	
John Carington	
	Knights of the Shire.
Robt. Umfravil, Knt.	Row. Thirlwall.
Rd. Grey, Knt.	Rich. Featherstonhalgh.
Rob. Ogle, senr., Knt.	Gilb. Rotherford.
Rob. Ogle, junr., Knt.	Will. Muschance.
John Bertram, Knt.	Gilb. Eryngton.
Will. Elmeden, Knt.	Will. Clennele.
Joh. Middleton, Knt.	Joh. Hiron de Netherton.
Will. Swinburn, Knt.	Thos. Reed de Redesdale.
Joh. Manners, Knt.	Rog. Ushere.
Math. Whitfield, Knt.	Tho. Midleton.
Will. Carnaby.	Joh. Ellerington.
Joh. Fenwick.	Joh. Park.
John Middleton.	Rich. Lilburne.
Tho. Ilderton.	Tho. Elwicke.
Rob. Rames.	Joh. Eryngton.
Thos. Haggerston.	Nich. Herin de Melden.
Rob. Manners.	John Trewyk.
Laur. Acton.	Jos. Chestre.
Thos. Grey de Horton.	Lion. Chestre.
Thos. Blenkinsopp.	John Horsley de Horsley.
Jaco. Bach de Morpeth.	

[“Hutchinson’s Northumberland,” Vol. 2, page 450.]

Sir Thomas Swinburne, High Sheriff for the years 1628-29, gives a return of freeholders in Northumberland "from returns of freeholders and inquest," comprising:—

15 Knights.
 33 Esquires.
 182 Gentlemen.
 51 Yeomen (Spearman's MSS.)

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The following return of landowners in 1774 appears in Hutchinson, Vol. 2, p. 450:—

Duke of Northumberland, £40,000 per annum.

Duke of Portland, £8,000 per annum.

Earl of Tankerville, £12,000 per annum.

Earl of Carlisle, £10,000 per annum.

Lord Ravensworth, £3,000 per annum.

Sir G. Warren, £2,000 per annum.

Sir J. H. Delaval, £10,000 per annum.

Sir W. C. Blackett, £8,000 per annum.

Sir M. W. Ridley, £5,000 per annum.

Sir F. Blake, £4,000 per annum.

— Reed, Esq., £2,000 per annum.

Northumberland is essentially a county of large estates, large farms, and of old family holdings, and yet few counties in England can show a greater record of changes of estates and of families while retaining all its old associations. We still trace within its boundaries the old baronies of the Normans, with their sub-divisions into small estates; the old baronial courts are still held; the tenants still attend to do homage; and if the names of the lords have changed, can we not with justice say that the house of Percy worthily represents, and with added lustre, the old baronies of Visey and of Umfraville.

Mr Broderick, in his "English Land and English Landlords," published by the Cobden Club, 1881, gives the following table, extracted from "The New Domesday Book" of 1873:—

Class.	Acres.	Average.	No. of Owners.
Peers ..	322,722	35,858	9
Great landowners	471,523	8,897	53
Esquires ..	173,000	2,059	84
Greater yeomen	90,500	400	181
Lesser yeomen	49,130	170	289
Small proprietors	42,456	26 $\frac{3}{4}$	1,531
Cottagers ..	1,424	$\frac{1}{4}$	10,036
Public bodies	39,288	517	76
Waste ..	30,286		
	<hr/> 1,220,329		<hr/> 12,259

Though the changes which have taken place within the last 50 years will be afterwards mentioned (Appendix I.), it may be noted here in passing that since the above return was made in 1873, four of the great landowners have disappeared from the list, while the estate of another (the Charltons) is in the market, and of the esquires thirteen have sold out their holdings, not to mention smaller proprietors. Going back to the last 50 years—1837-87—the following old county families have either altogether disappeared or have lost their representative character in the county:—

The Stanleys of Haggerston (now represented by Sir John S. Errington of Sandhoe, Bart.)

Gillum of Middleton (Belford).	The Lords of the Admiralty.
Reed of Chipchase.	Selby of Cheswick.
Cay of Charlton (N. Charlton).	Vernon of Widdrington.
Smith of Haughton Castle.	Davidson of Swarland and Lanton.
Bigge of Linden.	
Grey of Morwick.	Coulson of Blenkinsop.
Wilkie of Hetton.	Clavering of Calleley.
Ogle of Causey Park.	Brewis of Eshott.
Taylor of Doxford.	Forsters of Tughall.
Tufnell of Holburn.	Atkinson of Lorbottle.
Tarlton of Ryle.	Lawson of Longhirst.
Gillan of Trewitt.	Buston of Buston.
Brandling of Gosforth.	Fitz-Clarence of Etal.

And at the present time the whole of the estates of the Charltons of Hesleyside (some 22,000 acres) are in the market. The Charltons are described by the late Dr Charlton in his "North Tynedale and the Four Graynes" as "the foremost Grayne," and he adds at page 101:—"The Swinburnes and the Charltons hold the lands they held in the thirteenth century. The Robsons are rife at Falstone, the Dodds are yet numerous on the border, and the Milburns are by no means extinct; may it be long ere these goodly names cease to be found in the district." And yet after the lapse of 16 years, the estates, the entire holding, of the chief of these names, are in the market, and may pass into the hands of strangers. *Sic Transit gloria mundi!*

To reverse the old proverb, having sped the parting guest, we now turn to notice and to welcome the new landowners since 1837, among whom the principal are:—Capt. Leyland of Haggerston; Mr A. H. Browne of Calleley; the late Lord Durham, now represented by the Hon. F. Lambton; Mr Hugh Taylor of Chipchase; Mr Leather of Middleton, near Belford; Sir W. Crossman of Cheswick; Lord Armstrong of Craggsdale; Mr Cruddas of Budle; Mr Straker of Stagshaw; Mr Morton of Biddick; Eyre's Trustees (Stamford); Messrs Joicey of Blenkinsop and Longhirst; Mr Ames of Linden; and Mr Laing of Etal; and when we consider that the gentlemen (some from a distance, though in others we recognise old friends), have expended considerably over two millions in the purchase of land within the county, while the following have added largely to their holding therein, viz:—The Duke of Northumberland, the Earl of Ravensworth, the late Lord Redesdale, the late Mr Cresswell of Cresswell, Major Mitford of Mitford, Mr Beaumont of Dilston, Mr Clayton of The Chesters, Mr Riddell of Felton, Mr Bates of Heddon, and Mr Weallans of Flotterton, we may be justified in expressing a hope that its future is safe in their hands, and that in Northumberland at least land is still a marketable commodity, though at a reduced value.

Within the past 50 years more than one-fifth of the whole lands in the county, or over 260,000 acres, representing some 300 separate estates, have either changed hands or have been offered for sale in the market, some having changed

hands two or three times within that period; and the result may be stated shortly, that fully two-thirds of those sold have been added to other estates within the county, the effect being to increase the size of large properties and to reduce considerably the number of the smaller holdings of squires and yeomen. This may be matter of regret, but at the present time it is a process going on over the country.

In a list of the sale of estates belonging to the Hon. Henry Grey in 1731, thirteen separate estates, containing 16,970 acres, and representing part of the estates of the late Ralph, Lord Grey, were sold to separate owners. Of these one is held by the direct representative of the purchaser of 1731; another has passed into the hands of the present Earl Grey; while all the remainder have changed hands, and are now merged in other and larger estates.

Dated from "Carron Abbey, 6th Sept., 1783." Dr Yelloby writes to his friend, the late Mr Wm. Burrell of Broom Park, lamenting the changes which had taken place, and says that in 1615—

Lemmington belonged to a Beadnell,
Shawdon belonged to a Proctor.
Bassington belonged to a Callaley.
Huln Abbey belonged to a Salkeld.
Gosforth and Felton belonged to a Lister.
Swarland belonged to a Hazelrigg.
Dunston belonged to a Whitwany.
Belford belonged to a Armourer.

An anecdote connected with Lemmington (from Spearman's MSS.) may not be out of place here: "Lemmington in 1627 was the seat of the Beadnells; in 1753 it passed into the hands of Robert Fenwick, Esq., High Sheriff of Northumberland. His son Nicholas married a daughter of Mr Collingwood Forster of Alnwick, who used to boast that there was not a furse or a whin bush in the county that had not at one time or other belonged to a Fenwick or a Forster."

The large farms of Northumberland have made it incumbent upon the proprietors to provide not only large accommodation for the farmer and for his stock, but also cottages for his workpeople employed upon the farm, who, in the absence

of villages, are obliged to reside thereon. Somewhere, about fifty years ago, the late Dr Gilley, then vicar of Norham, drew attention to the state of the cottages upon the Borders, which were then old and dilapidated; in fact relicts of former days, when the occupier, afraid of Border raids, was in the habit of carrying with him the doors and windows necessary for the dwelling. With security from disturbance came the desire for improvements, and Dr Gilley's views were soon taken up by Lord Grey, followed immediately by the Duke of Northumberland, then by other proprietors, large and small, until the cottages of Northumberland could compare favourably with those of any other county. These improvements are still going on, the cottage of thirty or forty years ago being found too small for the requirements of the present day.

Attempts from time to time have been made to induce the farm labourers to give up their migratory habits, and to settle down in villages similar to what we find in southern counties, where the small farmers are supplied from the neighbouring villages. Those attempts have, however, not been successful in Northumberland; the size of the farms would, of necessity, have placed any such village at a distance, while the men having charge of the horses and cattle must be at hand. Village cottages have to a certain extent induced men to remain longer at a place, but so long as the cottages are included in the farm, and are a part of the yearly wages appertaining to his employment, so long, more or less, will the yearly migration from farm to farm go on.

The tendency of the present time would appear to be that the squire and yeoman class are decreasing, the holdings of the large proprietors are increasing, while round our cities and towns a large number of small holdings of the suburban class have arisen. In former days the old yeoman was looked upon as the backbone of the country in time of need, and we cannot without regret note the fact that he is disappearing, and should he not become extinct, will exist only to farm the land which himself or his forefathers once owned.

[NOTE.—It has not been found possible to add the Appendix contemplated.]

The Functions of the Climbing Roots of Ivy. By
COMMANDER NORMAN, R.N., Fellow Bot. Soc., Edin.

(PLATE IV.)

I find that it always surprises the non-botanical mind, and very naturally so, to learn that the solid matter of plants and trees—even of the very largest, heaviest, and most imposing denizen of the forest—is derived from the air through the leaves, and very little indeed, just a few buckets of ash in the case of a moderate sized tree, from the soil.

Yet, of course, as we are all aware, there must be a soil connection, or, in the case of aquatic plants, a water connection, or those mineral constituents which are indispensable to the growth, health, and identity of the plant or tree cannot be obtained.

The aerial roots of many tropical plants, including the epiphytal or non-terrestrial section of orchids, serve to attach them to branches and other supports, and help no doubt to supply them with moisture; but with what else does not seem clear, as they are physiologically different from true roots. In the case of ivy, however, we have a plant with roots in the soil, whose branches are furnished with climbing rootlets or fibrous attachments as well, which are supposed to serve merely for mechanical support, and not to be true roots in any physiological sense.

In my garden I have ivy upon walls and ivy upon banks, and while that in the former position is furnished with them as usual, that upon the latter is wholly destitute of any indication of climbing attachments; but this is merely a reminder from personal observation of a well-known habit.

It is clear, therefore, that the climbing roots of ivy are products of the necessities of the situation, and my ideas have been directed to the supposition that in exceptional situations to supply abnormally urgent necessities, these climbing roots may be more capable than has generally been supposed of performing the functions of true soil roots.

Consequently I have much interest in drawing attention to the photograph—reproduced on Plate IV., and taken in January 1900—of a *Hedera helix* clinging to the wall of the gamekeeper's house at Overbury Court, Worcestershire, the estate of R. B. Martin, Esq., M.P. It will be seen at once that the stems—for there are two, though I am not sure whether they represent two separate plants—have no earth connection; as, upwards of fourteen years ago, within my own recollection, and upwards of eighteen within the keeper's, they were completely severed about five feet from the ground, the lower parts being uprooted and entirely removed, on account of some building or drainage exigencies, leaving the upper parts as represented.

Nevertheless, the ivy has continued to flower, fruit, and flourish, and even to make periodically climbing or spreading shoots, which have to be clipped; though very naturally the vigour of the latter is clearly very much less than those of another ivy on the same house in immediate contiguity, which has not been interfered with, whose branches may be seen to the right of the picture, touching—even mixing with—those of my subject.

Year after year I have visited this remarkable and interesting ivy, or ivies, and have always found it difficult to believe that during all that long succession of seasons they could have lived on healthily—even to the annual production of tissue, flowers, and berries—without something more than water and carbonic dioxide from the air; and for long I was impressed with the conviction that something must have been obtained from the oolitic limestone, or mortar, of which the walls of the house are built; in other words, that the climbing roots must have responded to the abnormal demands made upon them, and must have altered sufficiently in structure to enable them, partially at all events, to compensate for the absence of true roots.

In order to determine to what extent that has been the case, I obtained specimens of the climbing stem. A close inspection revealed the fact that the masonry of the house being rather loosely jointed, the ivy had taken advantage of the facilities offered by striking roots into the joints.

The point is, are these roots true roots independent of

the climbing rootlets, and different in structure from them, or are they climbing rootlets altered and developed? It is difficult to determine with certainty from the specimen, but apparently it shows fibres in every stage of development, from hairs to thick root-like processes. In the case of ivy upon trees, whose stems have been separated, the ivy always dies, I believe, because no nourishment is obtainable from the tree; but in the instance before us the struggle of the ivy for life has evidently depended upon its powers of penetrating and developing roots in the masonry. The attempt has evidently been successful, though of course within limits, but on the whole I think that my specimen is a nice example of the balancing of forces in the struggle for existence.

I think that the views of authorities on my subject may be interesting.

"The stem of the ivy is attached by dense tufted fibres, which serve for support, not for nourishment."—*Smith's English Flora*, 1824.

"The aerial roots of ivy are simply processes intended for mechanical support."—*Professor J. H. Balfour*.

"The climbing roots of ivy are physiologically different from true roots."—*Prantl and Vines*, 1886.

"Roots are usually buried in the soil, but they may be aerial, as in ivy."—*Chambers's Encyclopædia*, 1891.

"If we detach a portion of the stem (of ivy) on which climbing root-like processes have just begun to appear in a tender and pellucid condition, and lay it on damp moss in a shady place, it will be found that the claws begin immediately to lengthen into true roots, and ramify through the moss in search of nourishment, and if left alone will soon sustain the cutting as an independent plant. The tufted fibres must therefore be true roots which have been arrested in the process of development, but become developed, and penetrate far into masonry to which the plant clings, to provide for it whenever an accident shall result in isolation. Interesting examples of ivy as an aerial plant may be observed at Hadleigh Castle, near Southend, Essex, and on the old walls of Conway."—*Shirley Hibberd in The Ivy*, 1872—an instructive and interesting illustrated monograph.

On a Deciduous Cedrus Atlantica. By COMMANDER
NORMAN, R.N., Fellow Bot. Soc., Edin.

(PLATE V.)

Two sorts of deciduous Conifers are known to botanists, namely, the Larch and the deciduous Cypress, yet rare and isolated instances have occurred of deciduous Cedars, the first of which, *Cedrus Libani* var. *decidua*, was noticed by Carrière in 1851, and is recorded in Vol. xiv. of the Journal of the Royal Horticultural Society. He again visited the tree in 1866, found it completely denuded of leaves, and considered it a further proof of close affinity between Cedars and Larches.

Mr Adolphus Kent, the author of Veitch's "Manual of Coniferæ," writes to me:—"I have had brought under my notice a deciduous form of *C. Deodara*, so, with your *Atlantica*, we have now a deciduous form of each of the three Cedars."

The reference is to the original of the photograph which is reproduced on Plate V.

During a recent visit to Chichester, my attention being called to the tree in the grounds of Mrs Douglas Henty, Westgate, I inspected it, and elicited the facts that about sixteen years ago Mr Douglas Henty introduced from a nursery three small seedling African Cedars, two of which were planted in an adjacent open field, and the third in the garden about fifteen yards from the house, seven feet from a low wall beyond the house, and thirty-six feet from the stem of a tall, bushy, clipped Bay.

The two in the field, when I was there in June 1899, were healthy, well furnished, and flourishing trees, and have never displayed any abnormal tendencies; whereas the third one, near the house, has from the very first regularly shed its leaves every autumn, and assumed them again in the following spring, deciduously, like the Larch.

The photograph shows the Cedar as it was at the end of January 1900, and, except for the absence of leaves, presents nothing remarkable—unless, indeed, the growth be a little less robust and more straggly than usual, and than that of its two sisters in the open.

Of course I need scarcely remark that the thickened processes that appear on the branches are not leaves, but arrested branchlets.

Mr Kent supposes that the deciduous character is only an abnormal state produced by situation, or some local cause, though why that should be I can offer no explanation, nor am I aware whether botanical science has suggested any theory about the fall of the leaf in some trees and not in others.

An Elder growing on an Apple Tree. By COMMANDER
NORMAN, R.N., Fellow Bot. Soc., Edin.

(PLATE VI.)

THE experience of small seedlings growing in chinks of the bark and on decayed places in trees is a common one, so my third photograph—reproduced on Plate VI.—presents nothing of particular botanical interest, yet the original can hardly fail to arrest attention from even the most casual passer-by.

It represents a healthy, flourishing Apple, upon which is growing a healthy, flourishing, flowering, and fruiting Elder.

To the non-botanical observer it might be necessary to point out that in such a production there is nothing parasitical, the explanation being that an Elder berry has been dropped by a bird on the surface of the decayed scar of an old branch that has been removed, and has pushed its roots down through the partially decayed hollow of the trunk to the soil. I tapped the trunk to make sure that it was hollow.

I may add that the Elder first made its appearance about four years ago, and, as it was getting very straggly, I amused myself by pruning it for the tenant, Henry Wise, Esq., of Silver Rill, Overbury, Worcestershire, so as to ensure more compact and shapely growth.

Letter from the Clerk to the Long Parliament. (Communicated by WILLIAM WILSON, B.A., formerly Scholar of Trinity College, Cambridge.)

THE following copy of a Letter from the Clerk to the Long Parliament may be of some interest to the members of our Club. It contains what I should suppose to be somewhat unusual in such a document—an interlineation (viz. the word Ordinance), which is printed for convenience sake in Italics. The contractions, etc., are reproduced as far as possible, and memoranda are appended containing all the references to Henry Scobell that I have been able to find. The letter, I may add, was found by me in a bundle containing old Bridge accounts, Mayor's accounts, and other documents relating to the town and garrison, which might well repay examination, but which no doubt are reposing in undisturbed uselessness on the shelves of the Corporation's safe, along with old charters and other unconsidered trifles of a like kind.

Die Lune, 28^o Januarij 1649.

The humble Petition of the Maio^r Bayliffs and Burgeesses of Berwick upon Tweed was this day read.

Ordered by the Parliam^t. That the Towne of Berwick upon Tweed doe from henceforth hold and jnoye (*sic*) their Priviledges and customs, according to their Charter formerly granted them untill this House shall take further Order notwithstanding any Act *Ordinance* or Order of Parliam^t to the contrary.

Hen. Scobell, Cler
Parliamen

The endings of the lines of the signature are frayed and indistinct.

The following notices of Scobell are taken from "Pepys's Diary," edited by Lord Braybrooke. In this edition the old spelling is now and then used, apparently at random, and it has therefore been thought advisable to give the extracts in the spelling of the present day.

9th January 1659-60.

"Among other things, W. Simons told me how his uncle Scobell was on Saturday last called to the bar, for entering in the journal of the House, for the year 1653, these words: "This day his Excellence the Lord General Cromwell dissolved this House," which words the Parliament voted a forgery, and demanded of him how they came to be entered. He said that they were his own handwriting, and that he did it by rights of his office, and the practice of his predecessor; and that the intent of the practice was to let posterity know how such and such a Parliament was dissolved, whether by the command of the King, or by their own neglect, as the last House of Lords was; and that to this end, he had said and writ that it was dissolved by his Excellency the Lord G.; and that for the word dissolved, he never at the time did hear of any other term; and desired pardon if he would not dare to make a word himself what it was six years after, before they came themselves to call it an interruption; that they were so little satisfied with this answer, that they did choose a committee to report to the House whether this crime of Mr Scobell's did come within the act of indemnity or no. Thence into the Hall, where I heard for certain that Monk was coming to London, and that Bradshaw's lodgings were preparing for him."

This last sentence explains the whole affair. The Parliament knew that the King would soon "enjoy his own again," and Scobell was to be made the scapegoat. It was now safe to treat him "roughly":—

5th February (Lord's Day) 1660.

"In the Court of Wards I saw the three Lords Commissioners sitting upon some action where Mr Scobell was concerned, and my Lord Fountain took him up very roughly about some things he had said."

Note: Sir Thomas Widdrington and Serjeants Thomas Tyrrel and John Fountain had just been appointed Lords Commissioners of the Great Seal.

23rd November 1663.

"To St. Paul's Churchyard, and there bespoke 'Rushworth's Collections,' and 'Scobell's Acts of the Long Parliamhnt,' etc., which I will make the King pay for as to the Office, and so I do not break my vow at all": i.e. apparently some vow he had made not to buy any more books for some time to come. These were to be "charged to the Office"!

These are two more notices by Pepys of Scobell, who must have died some time previously.

12th December 1663.

"Luellin tells me that W. Symons's wife is dead, for which I am sorry, she being a good woman, and tells me an odd story of her saying before her death, being in good sense, that there stood her uncle Scobell."

8th January 1664.

"He (i.e. W. Symons) made good to me the story which Luellin did tell me the other day, of his wife upon her death-bed; how she dreamt of her uncle Scobell, and did foretell, from some discourse she had with him, that she should die four days hence, and not sooner, and did all along say so, and did so."

And thus Scobell disappears from the pages of the famous Diary. It is to be hoped, for the sake of the relations who survived him, that this was the last, as it seems to have been the first, of his return visits.

OBITUARY NOTICES.

Robert George Bolam of Berwick-on-Tweed.

By the death of Mr R. G. Bolam, which occurred very suddenly on 24th June 1899, the Club has lost an old and valued member whose place will not be easily filled. He joined the Club in 1868, and was generally able to attend a meeting or two every year, when his extensive knowledge of the district, not less than the genial good nature with which his information was imparted to others, made his presence always welcome. In the archæology and traditional lore of the Border, more especially on the English side, he took a deep interest, and very few men were more conversant with its topography and family history. Natural history and arboriculture were favourite relaxations, and in a practical way he was also well versed in the geology of Northumberland. Although the many business calls upon his time but seldom allowed him leisure to contribute directly to the "Proceedings," he was ever ready to extend a helping hand to those who were better off in that respect, and any special knowledge which he possessed was always freely placed at the disposal of others. With Dr Hardy his correspondence was voluminous, dating back over very many years, and the information thus acquired was frequently made use of by our late Secretary in drawing up his reports and papers. The editors of the new "County History of Northumberland" were also considerably indebted to him for going over and

correcting sheets and supplying details on many obscure points, and for the first volume of the series he wrote the chapter on Agriculture. The article on *Landowning in Northumberland*, printed on pp. 129-139, was one of a series which appeared in the local newspapers in commemoration of the Queen's Jubilee in 1887, and it contains so much that is interesting on this extensive subject that it has been thought worth while to reproduce it here.

Up till within a few months of his decease Mr Bolam had enjoyed general good health, but an attack of influenza in the spring of last year told heavily upon him, and had affected his vital powers to such an extent that his medical advisers urged him to take a prolonged rest from business. But to a man of his active habits, engrossed as he constantly was with work, it is not an easy matter to leave home on short notice, and not thinking himself so weak as he really had been, the much-needed holiday was delayed until, as the sequence proved, it was too late. In company with his friend, Mr Leather Culley of Fowberry Tower, he left home on Monday, 19th June, for Luss, on Loch Lomond, and it was there that, early on the following Saturday morning, he breathed his last. They had been fishing together on the loch the previous day, and when Mr Culley parted from him in the afternoon he appeared to be in his accustomed health and good spirits, and to be enjoying his holiday. It had been arranged that they should meet again in the beginning of the week, but a Higher Power had decreed otherwise, and the telegram the following morning, announcing that he had quietly passed away in the night, came therefore as a great shock to his many friends and relatives at home.

Born on 31st May 1827, at Way-to-Wooler, of which his father was at that time tenant, the subject of our notice was the second son of the late John Bolam, who afterwards farmed Easington Grange and Glororum, and died in 1874. His forebears had been settled in Northumberland from very early times, and had for many generations back been engaged in agriculture in the county, farming in some instances the land which their ancestors had once owned. Upon leaving school, in 1844, Mr Bolam served a premium

apprenticeship with the late Mr John Bourne of Newcastle, an eminent civil engineer of his day, and while in his office assisted in the survey of a considerable portion of the land taken for railways in Northumberland and the adjoining counties. Several of his old field-books and plans of these early days, still in existence, testify to that great accuracy and attention to detail, which to the end was so characteristic of him; while the sketches, with which they are occasionally interspersed, prove him to have been more than ordinarily proficient with the pencil.

After he left Newcastle Mr Bolam was for some years with the late Mr Lowrey, at Barmoor, until at that gentleman's decease, in 1865, he succeeded to his business as a land agent, and, up to the time of his death, few men have been better known or more highly esteemed in that capacity than he was. His intimate knowledge of all subjects affecting the landed interest made his advice on such matters much sought after, while the reliance placed in his integrity and judgment was frequently shown by both landlord and tenant applying to him to settle knotty points between them. But while his rare aptitude for business and his methodical habits enabled him to get through an enormous amount of work, he never grasped at business, and many persons have reason to remember with gratitude professional services rendered by him gratuitously. With him work was always regarded less as a means of making money than in the light of a duty, which he owed it to himself as well as to his clients to perform to the best of his ability, and he sought no higher reward than the approval of his own conscience.

As a sportsman Mr Bolam belonged to the old school, and when time allowed no one could enjoy a country life more than he did, or enter more thoroughly into its pursuits. A good shot with both gun and rifle, he could always be relied upon to give a satisfactory account of himself either in the field or by the covert side, and with the rod he was a past master, especially devoted to fly fishing. He was also an accurate observer, and for many years kept regular records of the arrival and departure of our migratory birds, the highest and lowest temperatures, etc. He also took the keenest interest in all antiquarian matters, and had formed

a small but select collection of local antiquities. For many years he had been a member of the Architectural and Archæological Society of Durham and Northumberland, and of the Society of Antiquaries of Newcastle-upon-Tyne. He became a life member of the Royal Agricultural Society and the Highland Society in 1866, and, as representing the estates under his charge, he had served upon the Tweed Commission for more than twenty years, during which time he had also been an active member of its Police Committee.

His library contained a rare and valuable collection of local histories and works of reference, and with the contents of his volumes he was intimately acquainted. When particular information was required upon any special point, he was seldom at a loss to know where to turn for it, and no trouble was ever spared to make certain that his information was correct before he would venture to quote it. He was a Churchman, and in politics a staunch Conservative, who had often done yeoman service in the interests of the party at election times. "Whatsoever thy hand findeth to do, do it with thy might," was an axiom which he sought to carry out through life, and, with his retirement from the scenes of his labour, Northumberland mourns a son whose loss has left her distinctly poorer.

Rev. George Gunn, M.A. By REV. DAVID PAUL, LL.D.,
Edinburgh.

It was only so recently as the 30th September 1898 that Dr James Hardy, Secretary to the Berwickshire Naturalists' Club for twenty-seven years, died, and already the pages of its Proceedings are opened to receive an obituary notice of his successor. All who are interested in its affairs and prosperity were hoping that, having recovered in some measure from the loss caused by the death of that gifted and devoted steersman, it would continue its course for many years under the guidance of him who had been unanimously chosen to stand at the helm in his place. The beginning made by the new Secretary was of such a kind that any fears which the older members might entertain were gradually dissipated, and it was soon generally felt that the appointment of Mr Gunn to his arduous and responsible post had been both safe and wise. The hope, however, that he might continue for long to direct its management has not been realised. After having acted as Dr Hardy's colleague for two years, and held the office of sole Secretary for the brief period of fifteen months, he too has passed away.

George Gunn, though his lot was cast in the Borders for the last twenty-two years of his life, was not a Border man. He was born in Edinburgh, on the 3rd of June 1851. His father, who was sub-editor of the *Edinburgh Courant*, died when his son was still a mere boy. He received his education at the High School and the University of Edinburgh. His course at college was more than a respectable

one, and it would probably have been distinguished if the circumstances of his early life had been more favourable to study. But he was the eldest son in a family of five, and, like many another Scotch student, he had to eke out the somewhat scanty home resources by spending several hours a day in private teaching, as well as in assisting his younger brothers. After passing through the Arts Curriculum, and gaining the degree of M.A., he entered the classes of the Divinity Hall, and received license as a Probationer in 1876 from the Presbytery of Edinburgh. Shortly afterwards he was appointed assistant to Dr Norman Macleod, minister of St. Stephen's Church, in that city, and in that capacity he continued for about two years.

In the spring of 1878 he was elected minister of the united parishes of Stichill and Hume, and was ordained on the 21st of June. Thereafter, for nearly twenty-two years, till his death, which occurred on the 12th of January 1900, he exercised his ministry in Stichill, identifying himself with all the interests of the parish, and enjoying the esteem and affection of his parishioners, which he preserved unbroken till the end. He made himself the friend of all, sharing their joys and sorrows. His relations with those of his parishioners who did not belong to his own congregation were of the most cordial and amicable kind, particularly with his venerable colleague, the Rev. David Cairns, of the United Presbyterian Church, with whom he worked all these years in perfect harmony, and who paid a touching tribute to his memory, in a sermon preached on the Sunday after his death. There was nothing done in the parish without Mr Gunn. Lectures, social meetings, harvest homes, every kind of gathering for instruction or recreation he took a chief part in. He was deeply interested in the cause of education, and, both as a member of the School Board and in his private capacity, encouraged and stimulated teachers and pupils. For some time he assisted Mr Outhbert, the schoolmaster at Hume, in the teaching of science subjects, with the notable result that at least two of his pupils gained valuable scholarships at South Kensington, distinguished themselves there, and now occupy honourable positions in the geological field. His duties as parish minister were

always conscientiously and faithfully performed. He did not allow his other interests to draw him away from his main work. He visited his people assiduously, and was very attentive to the sick, at whose bedsides his ministrations were greatly valued. He was a model parish minister, and the bond that united him to his people was of the closest kind, as was manifested by the enthusiasm with which the twenty-first anniversary of his ordination was celebrated by all classes, and still more by the universal sympathy that went out towards him in his last illness, and the grief that threw the whole parish into mourning at his death. He will be long remembered in Stichill as a faithful minister and as a constant friend.

In this short memoir particular notice should be taken of his scientific studies and attainments. He had not received any proper scientific education in his earlier years. When he was at college his private teaching occupied all the time he could spare from his professional studies. But in the greater leisure of a country parish his scientific tastes rapidly developed, and he availed himself of every opportunity of adding to his knowledge. He was surrounded by nature in his new home, and interesting natural objects of all kinds thrust themselves upon the observation of the young man fresh from a city life. The woods of Stichill and Newton Don, the wayside flowers, the mosses on the walls, the quarry on the borders of his glebe, the old castle of Hume with all its historical associations, equally appealed to his new-born sense of curiosity and wonder. He began to turn his attention to botany, geology, and archæology, not studying them, however, very systematically, rather adding fact to fact as his daily observations supplied the material. He would have been the first to disclaim any pretension to authority in any of these sciences. He worked simply as a field-naturalist, whose ear was open to the varied voices of Nature around him. It was nature in the concrete that he loved and studied, nature as it presented itself in the manifold objects around him. It was plants that interested him rather than their morphology, and rocks rather than theories of their formation, and by constant use of his opportunities he gradually acquired a very considerable knowledge

of all the plants and minerals in his parish. Nor did he confine his observations to his parish and the surrounding district. He was a member of the Scottish Alpine Botanical Club, and of the Cryptogamic Society of Scotland, and nothing pleased him more than to roam with congenial companions over the hills of Perthshire in search of such treasures as *Saxifraga rivularis*, or *Carex ustulata*, or *Cystopteris montana*, or *Woodsia hyperborea*, picking up at the same time anything in the shape of a rare mineral that he might come across. It was one of the greatest joys of his life when he had the opportunity, in 1898—little more than a year before he died—of taking a more distant flight, and accompanying two of his most intimate friends into the wilds of the Southern Tyrol. There he found a field of botany which threw the woods and waysides of Sticill, and even the Breadalbane Hills, into the shade. To feast his eyes on a great patch of *Primula glutinosa*, in all the beauty of its fragrant violet flowers; to gaze, after toilsome climbing to a lofty height, on the shy, modest *Eritrichium nanum*, most charming of Alpine plants; to revel among Gentians and Androsaces and Soldanellas, was the opening up of a new world to him. It had been the dream of his life to behold with his own eyes the glory of the Alps, and to gather their treasures, and happily his dream was fulfilled before he died. He never tired of recalling the scenes and impressions of that memorable time during the few months that still remained to him.

Mr Gunn possessed an extensive Herbarium, composed for the most part of his own gatherings, but supplemented by those of the late Mr Andrew Brotherstone of Kelso, which he acquired on that botanist's death. A considerable part of the latter, however, was subsequently injured by fire. More noteworthy than his Herbarium was his collection of minerals, which he had carefully classified and named, and which, arranged in a large case along one of the walls, formed a conspicuous feature in his study. In addition to these he possessed a varied collection of antiquarian objects—stone celts, stone hammers, flint implements, whorls, querns, cannon balls shot from Hume Castle, and such like. Anything illustrative of ancient life in Scotland was prized by

him, and when any such object was found in the parish, it was brought as a matter of course to the minister. He was equally interested in the ecclesiastical and civil history of his parish, and was constantly hunting up—either in the manuscript documents of the Register House in Edinburgh, or in the printed volumes of antiquarian societies—new facts bearing upon it, and the knowledge he thus acquired he afterwards turned to good use. He had all the curiosity of an intelligent, inquisitive mind, and nothing came wrong to him that satisfied his thirst for knowledge.

The year after he came to Stichill, Mr Gunn was elected a member of the Berwickshire Naturalists' Club. For a considerable time he took little active part in its work beyond attending its meetings, and making use of the opportunities for scientific study which they afforded him. His first contribution to the Proceedings was a short obituary notice of his friend and neighbour, the Rev. William Stobbs, minister of Gordon, who died in 1885, and whom some of us remember as a man of great kindheartedness and originality. Thereafter, nothing from his pen appeared in our pages for many years. He was, however, becoming gradually known to the members of the Club, not only as one of the most sociable of men and pleasantest of companions, but as one who had much more than an average knowledge of the subjects that the Club mainly concerned itself with. And so when Dr Hardy was beginning to feel the weight of his many years, and was no longer able to discharge all the duties devolving upon him as Secretary, and when it therefore became necessary to appoint some one as his assistant, the eyes of those who were most capable of judging turned on Mr Gunn, and it is a proof of the confidence the Club reposed in him that he was unanimously elected Joint Secretary in October 1896.

He was well fitted for such a post. He had a certain amount of spare time after all his duties to his parish were discharged, for its population did not exceed 650 souls, and, in addition to being competent from a scientific and literary point of view, he was well known to many of the members, and he possessed that affable and conciliatory manner which is so necessary in the Secretary of a large Society. It was

with reluctance that he accepted office, for he was diffident of his own powers, but he yielded at last to the clearly expressed desire of the Club, and his scruples were partly removed by the knowledge that Dr Hardy was anxious that he should be appointed. He entered on his new duties with characteristic energy, giving his colleague every assistance in his power, and working with him in the most harmonious and cordial manner. But it was not till after Dr Hardy's death that it was seen how completely the confidence of the Club was justified. He threw himself heart and soul into the work which now entirely devolved upon him, making arrangements for the meetings, conducting a voluminous correspondence, and attending to the multitudinous details, which consumed so much of his time, and yet which could not be neglected. The issue of the Proceedings of the Club had fallen into arrear, but he worked diligently and laboriously, and issued one Part after another until the arrears were wiped off. His own contributions in the form of set papers, as distinct from reports of meetings, were not numerous, but from the date of his association with Dr Hardy in the Secretaryship, his time was too fully occupied to permit of much original writing. His presidential address, delivered at the Annual Meeting in October 1894, had for its subject the early history of Stichill down to the year 1627, and is a long, minute, and clear account of the parish, which cost him much laborious investigation. He gathered together from many sources all the facts bearing on the subject that can now be ascertained, and he scrupulously cited his authority for every statement of importance. The paper is a valuable chapter of local history, and takes a place among the best presidential addresses preserved in the Proceedings of the Club. In 1897 he contributed a somewhat similar paper on the ecclesiastical history of the parish of Hume, now united to that of Stichill. This paper displays the same features as the other, careful accuracy, extensive survey of documents, clearness of presentation, and a deep feeling of sympathy with his subject. It is to be desired that the history of all our Border parishes should be as fully treated, and by as competent hands. If Mr Gunn's life had been spared, he would doubtless have added

from year to year further contributions to the annals of the Club, in whose work and prosperity he was so deeply interested.

Mr Gunn turned his knowledge of botany to practical account in his manse garden, where he had collected a large number of uncommon plants. He had several rockeries, on which he grew Alpines with much success, and it was these that received his special attention. Latterly he had taken a fancy for cultivating hardy ferns, of which he possessed many good varieties. It was always worth while, at any time in spring or summer, to visit his garden, for he was sure to have many things of beauty or variety to show the visitor, and it was delightful to see the enthusiasm with which he displayed his treasures. No one who cared for plants went empty handed away.

It remains to say a word with regard to Mr Gunn's character, and one may speak of this without any fear of falling into exaggeration. It was the genuineness and guilelessness and loveableness of the *man* that specially endeared him to his friends. He was one of the truest and kindest and friendliest of souls, one whose life was in all things simple and honourable and pure. There was a peculiar attraction about him that was felt by both old and young. Children were specially sensitive to it; he made friends with them at once; they were drawn to him by a magnetic sympathy. And older people were attracted in the same way. He was a man who had not only many acquaintances, but many friends. And to them all he was as true as steel; his friendship was not sometimes cool and sometimes warm, according to the mood he might be in; he was always the same kindly, sympathetic, friendly man. And so he did not lose his friends. He might differ from them, for he had his own firm opinions on what was right; but they respected him for that, and the truest friendship is based on respect. Everyone who was brought into contact with him recognised his straightforwardness. He abhorred all ways that were tricky and mean. In public and in private life he was the same. You could always depend upon him. He could be trusted to do what he thought to be right, even though his own interest might lie in the other direction.

And a marked feature in his character was his unselfishness. He would go out of his way to serve another, not thinking of his own convenience, sparing himself no pains or trouble, if he could oblige or gratify another in any way. He might be busy, or he might be tired, but he was always ready to do for a friend what he would not have taken the trouble to do for himself. At the meetings of the Club he was a delightful companion, intelligent, genial, humorous, anxious that every meeting might be a success, and contributing much by his own presence to make it so. The Club has lost one who was not only an efficient and devoted Secretary, but one whose influence went far in the direction of binding it together, both as a scientific society and as a brotherhood of friends. There could be only one feeling among its members when the announcement of his death was made, a universal feeling of regret, joined in the case of many to the pain of a genuine sorrow. To the great majority it came as a surprise. He had been working up to within little more than two months of his death, and those who had heard of his illness had little reason to apprehend that it would terminate fatally. He had fallen, however, into such a state of weakness from inability to take nourishment that, though more favourable symptoms appeared towards the end, he was unable to rally. His thoughts during his last days were much occupied with the affairs of the Club, and with his parish and his friends. He died as he had lived, thinking of others. *Desiderandus quidem interiit, sed non lugendus.* He had led a true, useful, honourable, God-fearing life, and he has left a fragrant memory behind him that will long be cherished by all who knew him.

Henry Hewat Craw, West Foulden. By CHARLES
STUART, M.D., Chirnside.

It is with deep regret that I record the death of Mr Craw, a zealous member of the Berwickshire Naturalists' Club, on the 23rd February 1900, whose presence will be much missed by many resident in the Eastern Borders. Notwithstanding the inclemency of the weather, his funeral at Foulden Churchyard, on the 27th of that month, was attended by a representative assembly from far and near. For some time back he had been in failing health. Influenza still further depressed him, and apoplexy and paralysis terminated his earthly career in a few hours.

Never very robust, he had a wiry constitution, which enabled him to get through much business of his own, as well as that of other people. The large sheep farm of Rawburn, in Lammermoor, extending to 6000 acres, would have been enough for any single man; but when we consider that West Foulden and Whitsome Hill (two of the best managed places in the Merse) were also under his care, it will be seen that he was far from an idle man.

He was possessed of a cultivated intelligence. His out-of-door life afforded him many opportunities of observing Nature, which he was not slow in taking advantage of. He confirmed by observation the presence of the true Alpine Hare in Lammermoor, at Byre Cleugh, by specimens shot there and at other places. Also many other facts in natural history recorded in our Proceedings. He was deeply read in history, especially relative to the old wars, his fine library of books affording him information not often found in a private house. He took great pleasure in antiquarian investigations. The remains of old British Camps along the face of Bunkle Edge, in Lammermoor, and in many other places in Great Britain, had been carefully examined by

him. Stone implements, collected on his farms and elsewhere, were treasured by him. Botanically, he knew the stations for the *Linnaea borealis*, *Trientalis*, *Europea*, and *Vicia orobus*, three representative plants in the Lammermoor region, near Rawburn.

From his father he inherited a genius as a pomologist, and possessed a very fine collection of apples suitable for the climate of the Eastern Borders, derived from the best sources, and grown on black wooden fences, hollow in the centre. For high colour and quality his fruit was unsurpassed, and at an International Fruit Show, in Edinburgh, his apples took a first prize, when shown against those from a more favoured climate in the south. He was a skilled grafter, many of his trees being models of high cultivation, and prolific to an extraordinary degree.

For many years he has sent a record of the rainfall at West Foulden and Rawburn to enrich our "Proceedings," proving that we live in a tolerably dry corner of Scotland.

Among all his business, his work people were never forgotten, and in sickness his quiet kindness will be much missed by many of them. The wreath laid on the grave was a true proof of the estimation in which they held him:—"In memory of our dear friend," etc., etc.

"The world goes ever on and on:
What boots it friend to thee or me?
It still will go, when we are gone,
And go no jot less merrily.
The faces all have shadows grown,
The voices faint as evening's sighs,
The world a world of ghosts alone,
But still the motly rush goes by;
Ever new and ever old,
With the wherefore still untold."

Meteorological Observations at Cheswick, 1899. By MAJOR-GENERAL SIR WILLIAM CROSSMAN, K.C.M.G.

*Lat. 55° 42' 37" N. Long. 1° 57' 29" W. One mile from and 100 feet above sea.

Thermometer 4' above ground—shaded.

Rain Gauge—Diameter of Funnel, 5". Height of top above ground, 7½".

1899. Month.	TEMPERATURE.						RAINFALL.			DIRECTION OF WIND.			
	Absolute.		Averages.			No. of Days 32° or under.	Total No. of Inches during Month.	Greatest Fall in 24 hours, and Date.	No. of Days '01 inch or more fell.	N. to E.	E. to S.	S. to W.	W. to N.
	Max.	Min.	Max.	Min.	Month					Days.	Days.	Days.	Days.
	Deg.	Deg.	Deg.	Deg.	Deg.					Days.	Days.	Days.	Days.
January	52	18	43·7	32·3	38·	18	2·22	·49 on 21st	23	1	7	8	15
Feb'y.	57	22	46·6	33·	39·8	15	1·33	·35 on 16th	15	6	8	7	7
March	60	16	49·3	33·5	41·4	12	1·58	·31 on 25th	17	5	3	9	14
April	63	28	53·2	37·3	45·25	6	2·44	·40 on 6th	19	11	2	4	13
May	75	32	55·9	39·9	47·9	2	3·19	·68 on 19th	18	20	3	5	3
June	79	36	68·9	47·7	58·3		2·07	·99 on 29th	10	10	7	4	9
July	80	47	70·9	52·8	61·9		2·91	1·19 on 1st	15	9	3	9	10
August	84	39	70·3	51·4	60·9		1·54	·49 on 27th	9	7	15	3	6
Sept.	78	32	63·6	44·7	54·1	1	2·83	·76 on 30th	21	1	1	9	19
October	69	28	58·2	40·	49·1	3	1·28	·85 on 1st	10	2	5	13	11
Nov.	60	28	52·1	40·3	46·2	3	1·62	·31 on 24th	14	3	4	17	6
Dec.	55	14	39·5	28·9	34·2	20	2·89	·56 on 29th	20	1	16	2	12
Totals						80	25·90		191	76	74	90	125

REMARKS.

Average Temperature of year, 48°.

Barometer highest, 30·82, on 26th January. Lowest, 28·30, on 29th December.

Thermometer highest, 84°, on 2nd August. Lowest, 14°, on 13th December.

Number of days at or below freezing point, 80.

First frost of winter 1898-9 on 10th November; last frost, 5th May 1899. First frost of winter 1899-1900, 29th September 1899.

* N.B.—The Latitude and Longitude hitherto given in these returns from Cheswick have been put down in error. The above is the correct reading, and members are requested to correct their former volumes accordingly.

CHESWICK, March 1900.

Notes of Rainfall and Temperature at West Foulden and Rawburn during 1899. By CHARLES STUART, M.D., from the late Mr H. H. Craw's records.

	WEST FOULDEN.				RAWBURN.			
	RAINFALL.		TEMPERATURE.		RAINFALL.		TEMPERATURE.	
	Ins.	100ths.	Max.	Min.	Ins.	100ths.	Max.	Min.
January ...	2	67	49½	19	4	0	50	20
February ...	1	22	55	24	2	0	48	22
March ...	1	63	66	18	2	50	62	21
April ...	2	10	61	17	2	60	63	22
May ...	3	28	73	32	4	0	70	30
June ...	1	75	78	38	1	0	74	32
July ...	2	52	79	42	2	70	76	44
August ...	1	0	82½	40	0	40	78	42
September ...	3	11	73	34	4	30	68	34
October ...	1	54	66	28	1	90	63	29
November ...	2	7	60	29	3	0	55	28
December ...	2	81	53	15	3	50	40	20
	25	70	82½°	15°	31	90	78°	20°

NOTE.

West Foulden is six miles from sea at Berwick-on-Tweed; 250 feet above sea-level.

Rawburn is 24 miles from sea; 920 feet above sea-level.

Donations to the Club, and Exchanges, from kindred Societies and Private Persons, during 1899 and up to June 1900.

Transactions of the Academy of Science, St. Louis, U.S.A.

Vol. VII., Nos. 17, 18, 19, 20; Vol. VIII., Nos. 1 to 12 inclusive; Vol. IX., Nos. 1 to 5 inclusive, and No. 7.

Wisconsin Geological and Natural History Society, Bulletins Nos. 1 and 2.

Transactions of the Wisconsin Academy of Sciences, Arts, and Letters, Vol. XI.

Proceedings and Transactions of the Nova Scotian Institute of Science, Vol. IX., Part 4.

Year Book of the Department of Agriculture, U.S.A., 1898. Bulletins Nos. 9, 10, and 11. do. 1898.

Report of the Secretary of Agriculture, 1898, U.S.A. Department of Agriculture.

North American Fauna (U.S.A. Department of Agriculture) Nos. 14 and 15.

Proceedings of the Boston Society of Nat. Hist., Vol. 28, Nos. 13 to 16 inclusive; Vol. 29, Nos. 1 to 8 inclusive.

Memoirs of the Boston Society of Nat. Hist., Vol. 5, Nos. 4 and 5.

Bulletin of the Essex Institute, U.S.A., Vol. 28, Nos. 7 to 12 inclusive; Vol. 29, Nos. 7 to 12 inclusive; Vol. 30, Nos. 1 to 12 inclusive.

U.S.A. Geological Survey, 18th Annual Report, Parts 1 to 5 inclusive; 19th Annual Report, Parts 1 to 6 inclusive; 20th Annual Report, Parts 1 and 6; Monographs, Vols. XXIX., XXXI., XXXV., and large Atlas accompanying Vol. XXXI.

Board of Trustees of Public Museums of Milwaukee, 16th Annual Report.

- Australian Museum, Report of Trustees for years 1894, 1897, 1898; Records of the Museum, Vol. III., No. 5.
- Journal of the Anthropological Institute of Great Britain and Ireland, New Series, Vol. II., Nos. 1 and 2 (Old Series, Vol. XXIX., Nos. 108 and 109.)
- Royal Dublin Society, Transactions, Vol. VI., Parts 14, 15, and 16; Transactions, Vol. VII., Part 1; Proceedings, Vol. VIII., Part 6.
- Memoirs and Proceedings of the Manchester Lit. and Phil. Society, Vol. 43, Parts 1 to 5 inclusive; Vol. 44, Parts 1 to 3 inclusive.
- Proceedings of the Royal Physical Society of Edinburgh, Vol. XIV., Parts 1 and 2.
- Proceedings of the Physical Society of Glasgow, Vol. XXIX.
- Proceedings of the Geologists' Association, Vol. XVI., Parts 2 and 4.
- Proceedings of the Society of Antiquaries of Scotland, Vol. XXXII.
- Proceedings of the Society of Antiquaries of Newcastle-on-Tyne, Vols. VIII. and IX. (A few pages apparently wanting.)
- Archæologia Æliana, Part 52, Vol. XX; Part 53, Vol. XXI.; and Part 54, Vol. XXII. part 1.
- Transactions of Hull Scientific and Field Nat. Club for 1898, Vol. I.
- Collections, Historical and Archæological, relating to Montgomeryshire and its Borders, Vol. XXX., iii.; Vol. XXXI., i.; and part of Vol. LX. *From the Powysland Club.*
- Proceedings of the Bath Nat. History and Antiquarian Field Club, Vol. IX., No. 2.
- Nat. Hist. Transactions of Northumberland, and Durham, and Newcastle-on-Tyne, Vol. XII., Part 1; and Vol. XIII., Part 3.
- Zweiunddreissigster Bericht der Oberhessischen Gesellschaft für Natur- und Heilkunde, 1897-98-99.
- Transactions, Edinburgh Geological Society, Vol. VII., Part 4.
- Proceedings and Transactions of the Croydon Microscopical and Nat. Hist. Club, 1898-99.
- Transactions of Norfolk and Norwich Naturalists' Society, Vol. VI., Part 5.

Annual Report of Public Museum, Wanganui, New Zealand, 1899.

Bulletin of the Geological Institution of the University of Upsala, Vol. iv., Part 1 (1898.)

Ellis' History of the Corallines (1750.) Dr Johnston's copy, presented by his daughter, Mrs Barwell Carter.

Cardiff Naturalists' Society, Report and Transactions, Vol. xxxi.

Journal of Royal Institution of Cornwall, Vol. xiii., Part 4. Transactions of the Scottish Nat. Hist. Society, Vol. xiii., Part iii.

The following from Upsala University.

Zoologiska Studier, Festskrift, Wilhelm Lilljeborg. Tillegnad, På Hans Åttionde Födelsedag, Af Svenska Zoologer, 1896.

Några Experimentella Bidrag, Till Kännedomen om Hjärnans Rörelser Af V.O. Sivéén 1897.

Om Den Anatomiska Byggnaden Hos De Vegetativa Organen för Upplagsnäring Akademisk Afhandling af Johan August Flinck. Med 3 Taflor 1891.

Bidrag till frågan Om Vägarna för Bacterium coli commune's inträngande i blåsan Försök till frågans experimentella lösning, med speciell hänsyn till Möjligheterna af en direkt genomvandring från rectum. af R Faltin 1896.

Till Kännedomen om Förändringarna i Blodets Sammansättning vid vistelse i Förtunnad luft och Höjdklimat en experimentell Studie af Emil Rosenqvist 1897.

Om Inverkan af Eterånga På Groddplantors Andning Akademisk Afhandling af Walter Lawrén 1891.

Synthetische Studien über Die Perowskit-Und Pyrochlor-mineralien Inaugural Dissertation von Per Johan Holmquist 1897.

Über Die Bildung Der Follikelhüllen Bei Den Ascidien Inaugural-Dissertation von Matts. Foderus 1896.

Über Die Graptoliten inaugural-dissertation von Carl Wiman 1895.

Bidrag Till Kännedom om Järnglansens Magnetism af J. Westman 1897.

Bidrag Till Kännedomen om Severiges ichthyobdellider Akademisk Afhandling af Ludvig Johansson 1896.

Über Die Quartäre Lagerserie Des Ristinge Klint Auf Langeland Eine Biologisch, Stratigraphische Studie Inaugural-Dissertation von Frithiof Andersson 1897.

Upsala Universitets Årsskrift 1875, Vol. I., Mathematik och Naturvetenskap.

Do.	do.	1875, Vol. IV.	do.
Do.	do.	1873, Vol. II.	do.
Do.	do.	1870, Vol. I.	do.
Do.	do.	1870, Vol. III.	do.
Do.	do.	1872, Vol. I.	do.
Do.	do.	1865, Vol. I.	do.
Do.	do.	1866	do.
Do.	do.	1874, Vol. II.	do.

Öfversigt af de inom Skandinavien (Sverige och Norrige) anträffade Hvalartade Däggdjur (Cetacea) af W. Lilljeborg.

Do.	do.	do.	do.
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Epicrisis Generis Hieraciorum. Elias Fries.

Om tvänne i Sverige hittills misskända arter af växtsläktet Rumex af Rob. Fristedt och Rob. Fries.

Bidrag till Kännedomen om Hafs-Bryozoernas utveckling af F. A. Smitt.

Naturalhistorien i Sverige intill Medlet af 1600—Talet af Gustaf H. Adolfs, 1894.

Om vissa ozganextrakts inverkan å Det Isolerade och öfverlevande Däggdjurshjärtat af Karl Hedbom, 1897.

Farmakodynamiska Studier å Det Isolerade och öfverlevande Däggdjurshjärtat af Karl Hedbom, 1896.

Zur Ornithologie Kameruns Inaugural-Dissertation von Yngve Sjöstedt 1896.

Anatomische Studien uber Skandinavische Cestoden Inaugural-Dissertation von Einar Lönnberg 1891.

Festskrift Til Det K,G,L. Universitet i Upsala Fra Det K,G,L. Fredriks Universitet 1877.

Spegelnefoskopet och Dess användning vid molnobservationer af C. G. Fineman.

Monographiae Andreaearum Scandinaviae Tentamen auctore Joh. E. Zetterstedt. et Joh. Björnström.

- Revisio Grimmerum Scandinaviae Auctore, Jno Em. Zetterstedt.
- Studien Über Das Gehirn Der Knochenfische inaugural-Dissertation von Gust, O, A. N. Malme 1892.
- Beiträge zur Anatomie Der Trematodengattung apoblema (Dujard) Hans Oscar Juel, 1889.
- Bidrag till Kännedomen om Krustaccer, som lefva hos Mollusker och Tunikater Af C.W.S. Aurivillius.
- Zur unterscheidung Des Bacillus Typhi Abdominalis vom Bacterium Coli Commune von F. E. Hellström 1890.
- Studien uber Die Einwirkung Des Lichtes von D.r Fredr. Elfving 1897.
- Über Eine isomorphe Reihe von Formiaten des Calcium, Strontium, Baryum und Blei, von Arthur Plathan 1897.
- Hieracia Alpina, Des Mittleren Scandinaviens von M. Elfstrand 1893.
- Embryologiska Studier af Carl Bovallius.
- Meddelande om Några Nordamerikanska, Jernmalmer M.M. af Hjalmar Sjögren 1891.
- Bericht uber einen Ausflug in den südöstlichen Theil des Kaukasus Von Dr Hjalmar Sjögren in Baku Oct.-Nov. 1889.
- Studier Öfver Insektlarver af Simon Bengtsson 1897.
- Bidrag Till Kännedomen om de Histologiska Förändringarna, Ryggmärgen, De Spinala Rötterna och Ganglierna vid Progressiv Paralyse af Chr Sibelius 1897.
- Ueber Giftige Eiweisse von M. Elfstrand 1897.
- Bidrag Till Kännedomen om Nematoderna 1893 af L. A. Jägerskiöld.
- Leptocephalids Being a dissertation by Pehr Hugo Strömman 1896.
- Om Ölands Vegetation af Ernst Hemmendorff 1897.
- Om Byggnaden och utvecklingen af Oedipodium Griffithianum (Dicke) Schwaegr af Erik Nyman 1896.
- Om Blommorna hos Scandinaviens Bladiga Lefvermossor af E.V. Ekstrand 1880.
- Bidrag Till Kännedomen om Anatomien hos Familjen Dioscoreae af Johan Richard Jungner 1888.
- Flora Gothoburgensis Petr F. Wahlberg, et Augustus Tim. Wistrand.

Flora Gothoburgensis Petr. F. Wahlberg, et Gustavus F. Brandsten.

Novitiae Florae Gotlandicae P. P. Auctor P. Conr. Afzelius.

Om möjligheten, enligt vegetabilierne naturliga analogier, a priori bestämma deras egenskaper och verkningar på mänskliga organismen af Carl Josua Wretholm 1834.

Sacra Corinthia, Sicyonia, Phlasiaria scripsit Per Odelberg.

Ur Djur-och Växtmotivens Utvecklinghistoria af Bernhard Salin 1890.

Undersökning af svafvets liniespektrum af E. Rancken 1897.

Bidrag till Kannedome om Malakostrakfaunan i Baffin Bay och Smith Sound af Axel Ohlin 1895.

Om Cyperaceerna af Promotor 1897.

Zur erkenntnis der Verwandtschaftlichen Beziehungen unter den Tagfaltern von Enzio Reuter.

Übersicht der Geologie Daghestans von Dr Hj. Sjögren in Baku 1889.

Lebermoosstudien im Nordlichen Norwegen von Dr H. Wilh. Arnell 1892.

Om Järnets Kritiska Längd-och Temperatur.förändringar af Gustaf E. Svedelius.

Beiträge zur Kenntniss der Brachiopoden, Inaugural-Dissertation, von. Th. Thorsten Ekman 1897.

General Statement of Account—October 1899.

INCOME.

	£	s.	d.	£	s.	d.
Balance due from Treasurer as per last account	2	7	4			
On Deposit with Commercial Bank of Scotland	200	0	0			
Interest thereon	3	13	4			
Arrears Received	27	6	0			
Entrance Fees	10	0	0			
Subscriptions	115	3	0			
Back Numbers of Proceedings sold, etc.	4	7	0			
				£362	16	8

EXPENDITURE.

Paid for Printing Proceedings for 1896	41	19	9			
Do. do. for 1897	107	12	6			
Do. do. for 1898	96	19	0			
Engraving Plates, etc. do.	34	2	6			
Printing Circulars and Stationery, Postages, Carriages, etc., including removal of Books, etc., from late Dr Hardy's	32	14	7			
Berwick Salmon Fisheries Co. for Salmon	9	19	7			
Berwick Museum, Rent of Room, etc.	3	10	0			
Expenses of Farne Island Meeting	12	17	0			
Expenses of other Meetings ..	18	19	9			
Balance in hands of Treasurer, carried forward	4	2	0			
				£362	16	8

Examined and found correct,

ELLIOT R. SMAIL.

11th October 1899.

Alphabetical List of Places visited by the Club since its formation in 1831.

[The figures refer to the year, volume, and page where the Report of the Meeting may be found.]

- Abbey St. Bathans. 1832, I. 6; 1834, I. 35; 1841, I. 247; 1842, II. 6; 1844, II. 88; 1848, II. 265; 1853, III. 136; 1860, IV. 166; 1861, IV. 246; 1870, VI. 109.
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- Beadnell. 1853, III. 163; 1858, IV. 60; 1866, V. 245; 1889, XII. 497.
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- Belford. 1851, III. 56; 1852, III. 127; 1855, III. 213; 1863, V. 93; 1880, IX., 244; 1896, XVI. 43.

Belford Hall. 1848, II. 342; 1856, IV. 16 and 20.

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PROCEEDINGS
OF THE
BERWICKSHIRE NATURALISTS' CLUB.

*Address delivered to the Berwickshire Naturalists' Club
at Berwick, December 20th 1900. By ARTHUR H.
EVANS, M.A., F.Z.S., Cambridge.*

GENTLEMEN,

The year of my Presidency is now fast drawing to its close, and the chief—and very pleasant—duty still remaining to be performed is that of thanking you for the great honour that you have done me in choosing me for the post. Residing as I do at a considerable distance from the Borders, I fear that I have only partly been able to fulfil the various functions that fall to the lot of a President, and I must therefore beg you to look with a lenient eye on my shortcomings, and to believe that I have done my best, as far as in me lay, to promote the prosperity of our old and well-known Society. But I am fully sensible of the fact that my best endeavours would have been in vain had it not been for the kind and thoughtful co-operation of the

members of the Club—for which I am truly grateful—and in particular for the invaluable assistance and guidance that I have received from its officers, both past and present. Our Organizing Secretary has, as you well know, performed his part to the admiration of all; and I am sure that I speak in the name of the whole Club in thanking him for what he has done, and in sincerely hoping that he may be induced to continue in office, not only for the coming year, but for many years subsequently. And if I mention our Organizing Secretary first, it is only because his name has priority in the list of permanent officials. Our Editing Secretary has been untiring in his endeavours to further our interests, and, even when gathering information for us outside of the kingdom, has done us the honour of leaving a most admirable substitute behind. Nor must the Treasurer be omitted, to whom perhaps the most serious of all the duties pertains: to the excellence of his management, willingly or unwillingly we must certainly “subscribe.” Finally my thanks are due to our late President, who so ably filled my place when I was unavoidably absent at the first meeting of the season.

During the past year we have experienced the greatest of losses in the death of our friend and Secretary, the Rev. George Gunn, the knowledge of whose admirable work is not confined to us alone; for his conscientious and painstaking labours have been highly appreciated by a wide circle both of friends and parishioners, in Edinburgh and in the country. His tactful management of the Club affairs, his unselfish discharge of parochial and scholastic duties, his kindness and his charity, mark the man as well as the minister; while his literary and scientific attainments were such as to justify the very high opinion that had been formed of them in his earlier life. As a fellow-member of this and of other learned Societies, I am glad to have the opportunity of adding my slight tribute to Mr Gunn’s memory.

The choice of subjects for an Address to an audience composed of members devoted to such varied intellectual pursuits, as are those of the Berwickshire Naturalists' Club, is so wide, and the subjects themselves of so diverse a nature, that it is no easy matter to select one which shall be at the same time appropriate to the occasion and of sufficiently general interest to the hearers.

Considering, however, how closely our former Secretary and lamented friend, Dr Hardy, was connected for many years of his arduous life with the preparation of annual reports on the Migration of Birds, and in view of the fresh impetus now given to the study of that most fascinating branch of Ornithology by the elaborate and careful "Digest" of the Reports of the British Association "Migration Committee" (1880-1887) by Mr W. E. Clarke, together with the admirable supplementary "Analysis" on Migration in Ireland, just published by Mr R. M. Barrington, I think that it may not be out of place to devote the main portion of my Address to the discussion of the facts ascertained by various observers, and in especial to the causes of migration and the ways of migratory birds. Surely it may be considered peculiarly fitting, in the very year when a special meeting has been convened to unveil the Memorial Window to Dr Hardy at Coldingham, to take the opportunity of discoursing upon a branch of learning in which he was ever wont to show the greatest interest.

Before entering upon the details of the inquiry, it is most needful to pay heed to the emphatic warning of Professor Newton, in his "Dictionary of Birds" (p. 547), that the two subjects of Migration and Geographical Distribution of Birds must by no means be confounded, as has not unfrequently been done by writers in the past. It is obvious that the former depends to a considerable extent upon the latter; but Geographical Distribution, that is, the manner in which birds are dispersed over the face of the globe, is a perfectly distinct

matter from those normal and annual changes of quarters to and from the breeding haunts, which we collectively denominate by the term Migration.

The two, however, have this much in common that they both involve to a greater or less extent the idea of "Expansion," and hence it is, no doubt, that so much confusion has arisen.

Wherever the original home of any group or species of birds may have been, it is clear that, as the numbers multiplied by natural and ordinary reproduction, an increase in the area of habitation would be the necessary result. Granted, for the sake of argument, that no adverse circumstances acted as obstacles in any one direction more than another, the tendency would be to circular expansion, on every radius, as it were, of a circle; a species might thus extend its range and eventually have a geographical distribution differing in some degree from the original, which would undoubtedly to that extent affect the direction of migration.

This expansion, however, is not in itself of a migratory nature. By the term Migration we imply that after the parents have succeeded in rearing their broods, the great majority both of old and young leave their summer quarters for other climes, to return for the next breeding season. Possibly, indeed, all birds as species (though not necessarily as individuals) act thus to a greater or less degree; but, before we can state this as a positive fact, much more must be ascertained regarding their movements, especially in the countries adjoining the tropics, and in the Southern Hemisphere.

Before migration takes place flocks are commonly formed,* the members of which journey in company to

* The young of most species being driven away whether by the parents (as in some cases they certainly are) or merely by the need of obtaining their food, do not at first flock—the flocking seems to be brought about by their meeting at places where food can most readily be got.

their winter homes. The object of this may be partly the protection which greater numbers afford; partly the comparative ease of procuring food when many individuals are bent on the same quest, and notify the results to their neighbours; partly the guidance given by the stronger to the weaker of the band. But here we must pause to note that the stronger birds are not necessarily the older; on the contrary, facts go to show that the young not only travel by different routes to their elders, but usually leave the land of their summer sojourn before the adults, though in such cases as that of our common Cuckoo the reverse is very noticeable. The longer winged individuals of a species appear often to migrate to a greater distance than their fellows, whether it be by starting at an earlier date, or by outstripping them owing to their greater mechanical powers of flight. This being so, it is far from universally true—if true at all—that the older birds act as leaders to those of tender age, a theory which has been broached by more than one writer on the subject. And in truth how the bands find their way is a question that as yet remains unanswered.

Next in order we must consider the reasons which induce birds thus to change their quarters with such great regularity.

There can be little doubt that the main cause of the movements is the growing scarcity of the food supply, though climatic conditions must certainly be taken into account, the more so as the abundance or lack of nutriment depends in the long run on the season and the weather. The rigours of an Arctic or an Antarctic winter would no doubt sooner or later be sufficient to drive all winged creatures to warmer regions; but it is plain that they do not remain in their breeding haunts until the temperature is of itself sufficiently low to expel them. On the contrary it is the gradually increasing cold of

the waning season that little by little diminishes the food supply; insect life becomes comparatively scarce; fruits ripen and decay; and the farthest outposts of the army of migrants become untenable, or untenable for any large number of individuals; while those that are the first to take flight press from the rear upon their nearest neighbours, who in like manner drive forward those that are at a still greater distance. Flock follows flock to warmer districts, until finally all have left their summer homes, or until only that small proportion remains which the country can support under the changed conditions, the latter perhaps not including a single individual which has been bred in the same parts, unless it be such as have learnt by dint of experience that they can rely on a more or less regular supply of food around the habitations of man.

How little effect ordinary weather changes have on the arrival and departure of birds may be seen in the case of such species as the Guillemot and the Puffin, which annually reach their breeding haunts almost to a day, and leave them again with equal punctuality—a phenomenon which may be advantageously studied at the Farne Islands by many of our members.

To talk of “instinct” as being the cause of migration is but to beg the question. Instinct gives rise to habits, and these may be acquired by the young from the parent by Heredity, or inherited capacity for action; it is instinct doubtless in a sense that teaches the bird to go, when to go, and where to go; but instinct of itself would produce no seasonal movements, if there were no prior experiences which gave the instinct birth, or, if I may be allowed to use the expression, “started the machine.” A machine moves a weight; but it is the power which acts upon the machine that corresponds to the cause of migration; the machine corresponds to the instinct.

For the return movements in spring similar reasons have often been assigned, though of a converse nature; the climate proves excessively hot, proper food supplies proportionate to the increase in numbers are lacking; in short, the birds find the cooler regions more suitable during the period of reproduction. But once again we must remember that many species breed under a tropical sun, and that of these certain can hardly be said to migrate in the strict sense of the word—if indeed they do so at all—while those that attain the highest latitudes of the Northern Hemisphere in summer are often found to overpass their fellows on migration, and to reach the most southerly climes in winter, where the heat at least would hardly incommode them in summer. Moreover, it is evident that many individuals press on beyond the limits which seem to supply all that could be desired for nesting purposes; but to understand this we need only consider that an area, which would satisfy the requirements of a very considerable population, is found lacking when demands are made upon it in excess of its productive powers. For the return migration then it appears we must seek further cases which are not at present evident.

To sum up, we may be justified in assigning the main cause of autumnal migration to some deficiency in the food supply, while it is evident that this failure, or partial failure, will occur at different periods of different years, in accordance with the severity of the weather; and thus we may account with ease for the earlier departure of birds in certain seasons. In other words, "Cycles of Weather," if such there be, may be found with matured experience to be coincident with "Cycles of Migration."

Such being, therefore, the causes predisposing to migration, it remains to consider in what direction the movements will presumably take place, and how far our theories are in accordance with ascertained facts. The

path followed by any species may be called its "Line of Migration," and the coincidence of two or more of these lines may be expressed by the term "Route."

We find accordingly that the main stream of migration normally flows in a direction more or less southerly in autumn, and more or less northerly in spring, which is precisely what might have been expected from our data; but the question is complicated by the fact that large numbers of birds fail to steer a course directly to the south or to the north, as for instance in the case of the Curlew Sandpiper, well known upon our shores on passage, though its breeding quarters appear to be entirely confined to a comparatively small portion of the Arctic Regions of Asia.

An explanation may, however, be found in the theory of "Lines of least resistance," or in other words we may assume that the flocks will follow that course in which they find their progress least impeded by any geographical or climatic obstructions. High mountains, for example, may prove insuperable obstacles to birds of weaker or more lowly flight, wide oceans may be found impossible to cross, or strong winds may cause some slight divergence in the angle of direction, a divergence which will increase proportionately the further the flocks travel.

We thus should naturally expect to find, and to some extent we do find, a preference shown by various species for river valleys—especially when of considerable breadth—for the coast-lines of continents, and for open plains, if not of exceptional sterility. But once more we must take into consideration the above-mentioned increase in the breeding area of any form—as far as expansion to the east or west is concerned—which will cause the surplus population, thrust outwards during successive seasons of reproduction, to take its departure in autumn over somewhat different lines from its predecessors. Consequently we are not astonished to discover that the "Lines of Flight" and "Routes" of birds are many and

diverse, and that much has been written upon the subject by various authors, of whom certain have undertaken to determine with more or less exactitude the precise directions that the flocks should follow. A greater mass of information must, however, be accumulated before we are enabled to accept any generalizations of this description, and we must be content for the present to indicate certain definite courses which birds seem to follow to the comparative exclusion of others, leaving it for future generations to continue the work which we have begun. Here let us take a glance at what has been done in Britain. Through the instrumentality of the British Association a Committee was formed to collect observations upon birds at the various lighthouses and light-ships around our coasts, observations which were continued from 1880 to 1887 inclusive. From the information thus gained we might consider ourselves justified in laying down certain rules which govern the immigration and emigration of birds as regards our shores, and this may no doubt be done to a considerable extent without serious error; but we must not fail to take into full account the exceptionally favourable and convenient position of our lights, the paucity of observers, and the fact that other stations might afford equally valuable, or even contradictory, results if equal diligence was used for a similar length of time.*

There is, moreover, the question of the height at which birds fly, and consequently what proportion of them fall altogether to be observed owing to their altitude; whether in fact we only notice those forced down from above by such causes as adverse weather. And in this connection it may be mentioned that birds have been noticed crossing the field of a telescope directed towards the sun or the moon at an estimated height of from 1500—15,000 feet.

* Similar observations have been carried on, and are still being carried on, at the Danish light-stations.

Further, it has yet to be determined to what extent light of itself attracts the flocks which happen to be on its level, or whether it ever draws them down from the upper regions.

It will have doubtless been remarked that the statements hitherto made, and the conclusions drawn therefrom, have had almost exclusive reference to the Northern Hemisphere; but such must needs be the case in the present state of our knowledge, for we cannot as yet judge accurately of what takes place to the south of the Equator, owing to the absence of precise information as to the movements of birds there, and the comparatively small number of qualified observers in those regions interested in the subject.

Yet even thus it is allowable to express an opinion—though as yet only an opinion—that, *mutatis mutandis*, the state of affairs in the Southern Hemisphere will not prove very dissimilar to that in the Northern, since the evidence, such as it is, afforded by New Zealand is to the foregoing effect.

Migration of the nature described in the foregoing paragraphs may be called Normal Migration, while the members composing the flocks are the True Migrants. At the same time it must be observed that all birds do not cover equal distances on their journeys. It is probable, with regard to many species, that the individuals which are most capable of flight, or perhaps those that start upon their travels earliest, go further than the remainder are able to do, and so outstrip their fellows both in autumn and spring; but, leaving such out of consideration for the moment, it is evident that the general movements will result in a shifting of the bird population to approximately equal distances in the case of the true migrants, all of which leave their summer homes when reproduction is over, and, after exhibiting themselves in the character of birds of passage in the

countries short of their destination, reach districts far removed from their several points of departure.

Far different is it with the Partial Migrants. By this expression we denote those species of which, though the majority leave the country under consideration, yet a certain proportion seem to be resident throughout the year. I say "seem," because in many instances what appear to be partial migrants may prove to be true migrants; or, in other words, all the summer residents—omitting exceptional cases—may with one accord leave their breeding quarters, while their places are supplied by other individuals of the same species, which have been bred in a colder climate. Of this tendency the Song Thrush and Skylark afford well-known examples. Indeed, it is perfectly possible that partial migrants are non-existent, and that the above explanation holds universally.

Lastly, there are the Irregular Migrants, whose very name implies that some exceptional circumstances have prevailed upon them to alter their course of migration to one entirely at variance with the normal, or even forced them to migrate in the first instance. Such may no doubt be ignored by the student of the ordinary lines of migration; nevertheless their actions are a matter of the greatest interest to ornithologists, and may prove to be governed by certain laws of periodicity, possibly themselves depending on periodicity in the weather of some nature as yet unexplained, and on a consequent failure in the food supply. At recurring intervals, for instance, hordes of Pallas' Sand Grouse spread over Europe from the Steppes of Asia; with much less regularity individual members of certain American species pay their visits to our shores, and even to those on the Continent; and, at least in the case of the latter, we can hardly fail to believe that the agency of stormy weather has contributed to their appearance.

Many other subsidiary points fall to the student of migration to consider, and of these it may be sufficient

to mention the rate at which birds fly—very differently estimated by various writers—the extent to which their powers of vision tell upon their movements, and the “rushes” or sudden “inpourings” of multitudes of individuals at some particular spot, a phenomenon constantly brought under the notice of observers at lighthouses; but the discussion of these would necessitate a most undesirable prolongation of my Address.

In conclusion, I would urge upon my hearers that there is yet much more to be learnt with regard to the subject, and that there is the greatest need for them to observe (and to observe intelligently) the movements of our native species, while carefully considering to what these observations and those of others may lead.

To take an example suggested by Professor Newton, it would be more than interesting to know what happens to the early broods of the Skylark, and where all its young betake themselves when they are fledged; to ascertain more fully what happens to all the Guillemots and Razorbills during the winter; or to keep records of appearances and disappearances of birds in concert with some observant friend in the far north or south. A regular report on the Farne Island birds would also be of general interest.

It is now my pleasant duty to nominate the President for the ensuing year, and I am sure that all our members will join me in hailing with delight the acceptance of the post by our friend and neighbour, Sir George Douglas, so well known for his literary achievements. The services which others of his name have rendered to the Club in past years will be within the recollection of most of us, and in no way can we more fitly inaugurate the new century than by once more gathering for our annual forays under the banner of a DOUGLAS.

*Reports of the Meetings of the Berwickshire Naturalists'
Club for 1900.*

BERWICK.

A SPECIAL MEETING was held in the Museum, at Berwick-on-Tweed, on Thursday, 3rd May, being summoned by the Hon. Treasurer, in consequence of the vacancy in the Club's Secretaryship, caused by the death of the Rev. George Gunn of Stichill.

The following members were present:—Mr George Bolam, F.Z.S., Berwick, Treasurer; Mr W. Boyd, Faldonside; Mr J. Ferguson, F.S.A. Scot., Duns; Colonel Milne Home of Wedderburn; Mr W. T. Hindmarsh, F.L.S., Alnwick; Mr G. P. Hughes, Middleton Hall; Mr J. S. Mack, Coveyheugh; Mr B. Morton, Sunderland; Captain Norman, R.N., Berwick; Mr J. L. Newbiggin, Alnwick; Mr J. Smail, F.S.A. Scot., Edinburgh; Mr T. B. Short, Berwick; Mr J. L. Campbell Swinton of Kimmerghame; Mr W. Wilson of Berwick; Mr E. Willoby, Berwick, and others.

In the absence of the President, the ex-President, Mr J. Smail, was voted to the chair.

ELECTION OF SECRETARIES.

The Chairman explained the special object of the meeting, alluding in feeling terms to the loss of the Club by Mr Gunn's death.

After discussion, it was moved by Captain Norman, and seconded by Colonel Milne Home, that the Secretarial duties be divided, and that Mr G. G. Butler of Ewart Park be appointed Editing Secretary, for the purpose of editorship and arrangement of the "Transactions." This motion was carried unanimously.

Mr Mack of Coveyheugh then moved that Colonel Milne Home be appointed Organizing Secretary. This resolution was seconded by the Chairman and supported by Captain Norman, and carried unanimously.

Colonel Milne Home, in accepting office, stated he could not bind himself to do so for more than the current year, and expressed a hope that a younger member would, before its close, be fixed on to succeed him.

ANCIENT CIST AT COCKLAW.

Captain Norman reported that an ancient British Cist had recently been found on the farm of High Cocklaw, within the liberties of Berwick. This was the fourth that had been found on the same farm. This one, however, was almost of special interest, inasmuch as it was found to contain an urn inside, with a large number of jet beads, and also two flint beads.

On hearing of the discovery, Captain Norman lost no time in visiting it. It was composed on the usual type, having a large slab on top, stone sides, and an earth bottom. In the course of centuries the whole of the bones had disappeared, and the action of the worms had filled the whole of the cist with soil. Captain Norman communicated with Canon Greenwell, who informed him that undoubtedly the cist was the burial place of a female of the bronze age. The type was very well known, but at the same time it was not a common one, and might be regarded as a distinctly interesting find. Captain Norman hoped to obtain the urn for preservation in the Museum.

NEW HABITATION FOR "LINNEA BOREALIS."

Mr Boyd exhibited a splendid specimen of the plant *Linnea Borealis*, which, it was stated, is a purely Highland Alpine plant, and one that is rarely, if ever, found in these parts. Mr Boyd discovered the plant at Wooden Hill.

On the motion of Mr Campbell-Swinton, a hearty vote of thanks was accorded to the Chairman for presiding.

The members afterwards dined together in the King's Arms Hotel.

ALNWICK.

THE FIRST ORDINARY MEETING for this year (1900) was held at Alnwick, on Wednesday, 6th June, and was numerously attended. It will be remembered by those who had the good fortune to be there as one of the most pleasant in the Club's records, for beautiful weather prevailed, and, favoured as the members were with the permission of His Grace the Duke of Northumberland to visit Alnwick Castle, the historic home of the House of Northumberland, and the surrounding parks, there was a great deal both to interest and to edify.

Amongst those present were:—Mr Arthur H. Evans, M.A., F.Z.S., President; Colonel Milne Home, Organizing Secretary, Caldra, Duns; Mr G. G. Butler, M.A., Ewart Park, Editing Secretary, and Mrs G. G. Butler; Mr Geo. Bolam, F.Z.S., Berwick, Treasurer; Mr Amos, Alnwick; Mr Johannes Albe, Duns; Mr Robert Alexander, Duns; Mr John Bolam, Bilton House, Leasbury; Dr Charles Clark Burman, Alnwick; Mr William B. Boyd, Faldonside, Melrose; Mr Robert Brown, Duns; Mr William Cuttle, Galashiels; Mr M. H. Dand, Hauxley; Mr William Dunn, Redden; Mr George Fortune and Miss Fortune, Duns; Captain Forbes, B.N., Berwick; the Rev. J. A. Findlay, Sprouston; Mr J.

Ferguson, Duns; Mr Arthur Giles. Edinburgh; Mr Robert Huggup, Hedgeley; Mr G. P. Hughes, Middleton Hall; Mr William T. Hindmarsh, Alnbank, Alnwick; Mr J. Crawford Hodgson, Alnwick; Mr B. Morton, Sunderland; Mr William Maddan, Berwick; Mr and Mrs R. Middlemas, Alnwick; Mr R. Middlemas, junior, Alnwick; Mr J. L. Newbiggin, Alnwick; Mr George Reavell, junior, Alnwick; Mr H. H. Ratcliffe, Stacksteads, Lancashire; Mr A. Riddle, Yeavinger; Mr James A. Somervail, Broomdykes; Mr T. B. Short, Berwick; Mr Alexander Steven, Berwick; Mr James Smail, Edinburgh; Mr Geo. Skelly, Alnwick; Mr J. Thompson, Shawdon Cottage, Yorks; Mr Andrew Thompson, Glanton; Mr John Turnbull, Galashiels; Mr G. H. Thompson, Alnwick; Mr Thos. Tate, Allerburn, Alnwick; Mr John Tate, Oaklands, Alnwick; the Rev. Edward Thornton, vicar of Ancroft; Mr Gerrard Thornton, Ancroft; Mr David Hume, Thornton, Berwick; Misses Veitch, Duns; Mr D. Veitch, Duns; Mr D. McB. Watson, Hawick; Mr Humphery Wilyams, Alnwick; Mr J. Wilson, Duns; Mr W. Weston, Alnwick; Mr A. Yeoman, Newcastle.

Assembled at the Barbican of the Castle at 11 o'clock, the company were conducted round the walls and towers by Mr George Skelly, who intelligently pointed out the many objects of historic and architectural interest. Commencing with the Barbican, he explained the dates when the various towers which flank the Castle were built, distinguishing the different classes of architecture and building, and throwing in a little anecdote here and there to make clear his descriptions. To the Octagon Towers, which command the entrance to the Keep, he made special reference, mentioning that their erection might be said to mark the extension of the ancient Norman structure, inaugurated by the Percies. The Prudhoe tower, so recently added, was examined with curiosity. It harmonises well with the other portions of the stronghold which was described as "a most strong fortress" so long ago as 1135. The external features having been examined, Mr Wilyams, Constable of the Castle, and Mr J. C. Hodgson, Librarian, led the party over the state apartments, which were viewed with admiration. The grand staircase, with its solid marble steps and beautifully coloured

walls, drew much attention, as did the pictures and the artistic and elaborate decoration of the various rooms. Quite a long time was spent in the library, where the thousands of books—rare and extremely valuable, many of them—formed objects of interest; and further enjoyment was obtained from the museums, the armoury, and the Egyptian collections.

The Castle thoroughly examined, most of the members formed a brake party for the "Long Drive," round the extensive, prettily-wooded parks. Here the deer were seen to advantage, and a lovely vista was opened out to the spectators. The trees in their varied tints of green were extremely pleasing to look upon, and indeed everything was full of summer beauty. A halt was made at Brizlee Tower (Plate VII.) and many members of the party climbed to its highest point, from which the view was magnificent. The Aln slowly winds at the bottom of the bank, while to the north the Cheviots are visible, and away in the far distance is the hill of Ross Castle, which marks Chillingham Park. Eglingham village is also to be seen amongst the trees. Hulne Priory (Plate VIII.) was the next stopping place, and here Mr George Reavell, junior, acted as guide, and explained many interesting points in connection with those picturesque old ruins. The site of the house is said to have been selected from a fancied resemblance to Mount Carmel, in Palestine, and the foundation to have been possessed, at the first, by some friars returned from the Holy Land. The return journey was made by way of Alnwick Abbey, and from there the party drove to the Star Hotel, where dinner was provided.

The President proposed the toasts of "The Queen" and "The Club," both of which were heartily honoured, and a cordial vote of thanks having been passed to His Grace the Duke of Northumberland, and to Messrs Wheler, Williams, Hodgson, Skelly, and Reavell, the company dispersed, at the end of a most enjoyable visit.

APPENDIX A.

Alnwick Castle.—From materials communicated by Mr Skelly of Alnwick.

Alnwick Castle contains an area within its walls of about five acres. It is uncertain for how long a castle may have stood here, but in all probability almost as far back as the Conquest.

The castle, as it existed in the time of Eustace Fitz-John and his immediate successors, would appear to have covered the same amount of space as it does now. In examining the curtain wall at different points, one may still discern masonry dating from the time of the first De Vescy; but owing to the unsatisfactory state into which the entire building drifted in the sixteenth and seventeenth centuries, it is somewhat hazardous to venture an opinion upon the exact date, more especially because of the patching up that occurred in the middle of the 18th century, when the first Duke resolved on making habitable this great border stronghold. A Norman castle must have been in existence in 1309, when Henry de Percy purchased the Barony from Bishop Bek; and this castle, it seems clear, the first Percy lord lost no time in remodelling and still further fortifying.

Among the earlier works in the outer Bailey, those of the 14th century are the Barbican, Abbot's Tower, Falconer's Tower, Armorer's Tower (Plate IX.) the two latter of which were removed in 1860, when the present Falconer's Tower was built in a new position. (Plate X.—View of Alnwick Castle before 1860, showing the old Falconer's and Armorer's Towers.) Of both Bailies the dimensions indicate that the present curtain wall is almost identical with that which existed in the times of the early De Vescis.

[At page 204 will be found a plan of the Castle, showing the modern alterations by the side of the older arrangements.]

At the time Bek held the Barony (1297 to 1309), the castle possessed an inner and an outer gateway, both of which were approached over drawbridged fosses. Clarkson's Survey (1558) mentions the following towers on the walls:—Armorer's Tower, Falconer's Tower, Abbot's Tower, Garret,

Barbican, Garret, Round Tower (now Clock Tower), Auditor's Tower, Garret, Record Tower, Ravine Tower, Constable's Tower, Postern and Sally Port.

The Barbican, one of the earliest parts of the present castle, belongs to the period of the first Percy lord of Alnwick (1312 to 1315). Adjoining the present porter's lodge, a small patch of Norman masonry is the sole relic of the old Norman Gateway, which was swept away to make room for the erection of the present Barbican. This, protected as it is by advanced towers, lofty running galleries, and by portcullises, presents a fine specimen of Mediæval Military Architecture, such as one can well imagine would, with the aid of valiant defenders, afford complete protection against a hostile entrance.

Alnwick Castle is one of the few in this country possessing stone figures upon its battlements, all of which are full length, and posed as if in the act of defending the approach to the stronghold. Above the outer arch of the present Barbican, a sculptured stone panel bears a lion rampant, and upon the cornice the following:—a crescent, the word *Esperance*, a locket, the words *Ma comferte*, and another crescent, while on the base is inscribed "*Esperance en Dieu*."

Contemporaneous with the Abbot's Tower, which probably derives its name from its having afforded temporary refuge to the Abbot of Alnwick Abbey during Border raids, the curtain wall that extends therefrom to the Barbican is interesting from the fact that while the lower parts of the wall are coeval with the works of the first lord, the West Garret* and the higher courses of masonry below the string course are not earlier than the time of the second Earl of Northumberland. The Abbot's Tower, three stories in height, is architecturally interesting in regard to doors, windows, and stone vaulting.

Formerly on the north side of the road that leads from the Barbican to the second Gateway stood the ancient "*Checker House*": whilst its principal chambers on the second floor

* These "*Garrets*" on curtain walls should be thought of in the sense of the kindred French word "*guérite*," for indeed many of them are, in shape, simply gigantic stone *sentry-boxes*.

were used as a Court House in connection with the Barony, the under flat was appropriated to the use of domestics. A little to the south of the Checker House was a similar building, which was wholly devoted to stabling and storage; but both these buildings were cleared away during the eighteenth century, the only reminder of this position of the stabling being the still existing tower called the Garner or Avener's.*

The stretch of curtain wall from the Barbican to the Clock Tower cannot be earlier than the middle of the sixteenth century. This part of the walls is provided with a small garret (the Avener's Tower just mentioned), but has no passage along the battlements. In making arrangements within the curtain the first Duke discontinued the stables in the bailies, and in lieu of them erected others to the west of the Clock Tower, giving them an entrance between the latter and the Avener's Tower. Towards the latter years of Hugh, third Duke, the stables were again extended and a riding school was provided. And in this part of the castle a further addition was made in 1854 by Duke Algernon, namely the new "Guest Hall," in which, when not required for its original purpose, the ducal carriages are stored.

The buildings from the Auditor's Tower to the second Gateway have during the last two centuries been subjected to great changes, first in the middle of the 18th century, and still more so during the recent restorations. The second Gateway may be ascribed to the time of the second Percy lord, 1315 to 1353. Like the Barbican it was defended by a fosse, gates, battlements, and a portcullis. In addition to these it was provided with a prison, and contained ample lodging for domestics.

The next in order is the Warder's Tower, which dates from 1854, having supplanted one of the preceding century. A few paces to the east of the latter is an ancient garret, erected on a small patch of Norman masonry, which shows the line of the curtain wall during the time of the De Vescis.

* French "avoine," an oat; an Avener being an officer in charge of grain.

At the time Duke Algernon was engaged in restoring the Castle, in 1854, the Record Tower was in a very dilapidated condition. The Duke, while fully recognising this, did not feel that immediate steps were then necessary towards its renovation; and so the Tower was allowed to stand till 1880, when, under the careful supervision of the late Duke, it was successfully restored.

Near the Record Tower is the site of the ancient Ravine Tower, which was demolished during the eighteenth century. In all probability this tower was no higher than the battlements of the wall, and served as a "Watch Tower." In removing some plaster from the curtain wall a short time ago, the workmen came upon two windows with cusped headings, and both had on either side the usual stone seats that were then used for military purposes. They now appear as recesses on the inner side of the wall, with their bases at the height of 5 feet from the ground.

Closely adjoining the Ravine Tower, and overlooking a charming landscape to the north of the town, is a small open turret known as "Hotspur's Chair," close to which is a patch of modern masonry in the wall, marking the site of a breach, which tradition alleges to have been caused by a body of Scots, who were all slain in their unsuccessful attempt to storm the stronghold.

Thirty paces, according to Clarkson, intervened between the Ravine Tower and the Constable's Tower, of which the "nether part then served as a buttry; the other parts were used as fair lodgings." In regard to position, style, and effect, this Tower is one of the finest and most interesting in the whole range; its bold architectural features and the detailed work of its doors, windows, and vaultings, finely exemplify the work of the early Edwardian period. Masons' marks upon some of the masonry of this building show it to be contemporaneous with that of portions of the castles of Dunstanburgh and Warkworth.

The next Tower on the curtain wall is the Postern, which, like several of the others, is three stories in height. In the sixteenth century this tower was thoroughly repaired by the seventh Earl of Northumberland, who added a lead covering to the roof; although during the Norman times this Tower

must have been strongly defended, it is certain that in after years its defences were further strengthened, or entirely remodelled.

At the time of Clarkson's survey a great portion of the inner ward was covered by buildings, the most important of which were the Chapel, Chantry House, Brewhouse, and Bakehouse. Facing the Ravine and Constable's Towers stood the Chapel, which measured in length 57 feet, breadth 21 feet, and height 21 feet, and which in 1558 was reported as being in a very good condition. Near to it was a conduit set with stone, which brought to a lead covered cistern a fine flow of fresh water from fields at the west of the town, known as "Howling Fields." Behind the chapel was the Brewhouse, a building measuring 60 feet by 27 feet, and close to the Postern was the Bakehouse, of about the same size as the Brewhouse. To the south of the latter were a Slaughter House and a Store House; and to the west of these stood the ancient Chantry House, of which, at the time of Clarkson's Survey, only a simple wall remained standing.

What was formerly the Keep, consisting of a series of towers of almost uniform height, is now dominated by the lofty Prudhoe Tower, the foundation of which was laid in 1854 by Eleanor, Duchess of Northumberland. In bold effect this tower adds to the dignity of the entire building; in style it resembles the prevailing work of the thirteenth and fourteenth centuries, and its architect must have made himself familiar with such buildings of that period as exist at Warkworth and elsewhere, and it bears sculptured on its front the lion couchant and guardant. Adjoining the Prudhoe Tower is the Chapel, with its high pitched roof and lancet windows, whose appearance tends to soften the rigid outline of the adjoining Tower.

The chief entrance of the Keep, through the Gateway of the Courtyard, leads one under the shadow of the ancient Norman Archway, whose lozenge and zig-zag mouldings are characteristic of Norman architecture, and assign to the archway a date between 1150 and 1180; whilst two flanking octagon Towers belong to the middle of the fourteenth century. In 1558 this Gateway was described as a "building of two towers of four house height." High up upon these

towers, below the string course, is a series of stone escutcheons, displaying arms of the following families:—Tyson, De Vesey, Clifford, Percy, Bohun, Plantagenet, Warren, Arundel, Umfraville, and Fitz-Walter; those of Tyson, De Vesey, and Percy represent the owners of the Barony, the others the most important matrimonial alliances. On the two centre shields are the arms of England and France.

This Gateway between the Octagon Towers had, like the others, its fosse, crossed by means of a drawbridge; and the Towers themselves of a uniform height, still bear on the summit of the battlements at the extreme angles four full length stone figures, all equipped in armour, and posed in the act of defence. The erection of these towers marks an extension of the Norman structure, and we find, as in the Barbican, the marks of the early Percies upon its front, the arms of Clifford indicating that this extension was not earlier than the time of the second Percy lord of Alnwick, who married Idonea, daughter of Robert Clifford. He died February 26th 1352, and was buried in the Abbey of Alnwick, and was succeeded by his son Henry, who at the time of his father's death was 30 years of age.

Of this Gateway, the late Dr Bruce said that "oft times from the windows of these towers will the spouse of Harry Hotspur have waved a parting adieu to her heroic husband, as he valiently rode forth on some warlike expedition."

Inasmuch as the Castle from the fourteenth to the early part of the sixteenth century was subjected to many changes, and still further when the first Duke of Northumberland resolved on making it more habitable, it becomes very difficult to determine the date of certain portions of its masonry. But it is nevertheless certain that at the time of the death of the fifth Earl (1527) the greater portion of the Norman structure had been demolished and replaced by later work.

That portion of the Castle which was purely Edwardian, the Great Dining Hall, generally assigned to the work of the first Percy lord, must in the eighteenth century have been in a very dilapidated condition, as was seen in 1854, when that part of the building was being restored. The workmen, when engaged in removing the plaster from the walls, discovered the site of the dais, and the hooks on which

the tapestry had been suspended. This apartment derived much of its light from a large protruding window which overlooked the courtyard. It would appear to have been similar in character, though superior in size, to the oriel window in the Chapel at Prudhoe. The walls of this chamber were of stone colour, relieved by white mouldings and pendent spandrils, while the ceiling was adorned by the arms of the Percies.

There are few sights more pleasing than that which the principal staircase affords. In breadth it measures 12 feet, each step being formed by one solid block of stone, which was specially procured from the forest quarry at Rothbury.

On a level with the Grand Staircase is the Guard Chamber, which is constructed so as to form an arcade. It is square; and while the flooring is wholly composed of small variegated marbles, the ceiling is relieved by means of flowers and foliage, and in the centre of these is a beautiful shield, bearing the arms of the Percies, and the motto "Esperance en Dieu." The frieze is deep and is divided into panels, upon the four principal of which are cleverly portrayed scenes illustrative of the chief incidents in the ancient ballad of "Ye Hunting in ye Cheviot." These are the work of Herr Gotzenburgh, and comprise the Departure, Repose, and Death of Douglas, and Death of Percy.

APPENDIX B.

Hulne Priory.—By George Reavell, Esq., junr., Alnwick.

Hulne Priory is an establishment of the White Friars or Carmelites, and in point of date was either the first or second house of that order in England, the other claimant for priority being Aylesford. It is said to have been founded by William de Vesci, but the earliest documentary evidence of period is an undated charter of John de Vesci, which must have been granted between 1265 and 1288 A.D. The ruins are more complete as regards plan than those of any other Carmelite house in England, and Clarkson's survey (made in 1567 for the seventh Earl of Northumberland) enables us—together with the excavations made by the late Duke of Northumberland—to make out the position and use of the various parts of the building.

The church where the Club gathered for the examination of the buildings is a simple aisleless parallelogram, 119 feet long by 19 feet 6 inches broad. Various items of interest were pointed out in the church, amongst others being the sedilia and piscina, sculptured monuments, and the socket for the lectern. It was also shown that the present east wall is only a piece of sham ruin, of which there are several examples.

The vestry was visited, and the curious recess with its stone shelf and chimney and sloped and drained lower shelf was examined, and Mr St. John Hope's theory of its purport put forward as a probable one. After looking into the chapter house and other buildings on the east, the cloister was entered, where the old roofing arrangement for the cloister walks was pointed out, those north and south having been covered

with lead on wood framing, the corbels for which still appear on the south wall of the church, and the east and west having been below the upper storey of two storey buildings, that on the east being the dorter range.

Clarkson in his survey refers to the southernmost part of this range as 'one howse called the wōmen howse wherein is two chambers with one chimley.' Mr St. John Hope says: "if by 'wōmen' we may read 'wormen,' the fireplace would indicate that this was the *calefactorium* or warming house of the brethren. It is, however, uncertain whether the name would be retained thirty years after the suppression, and it is equally possible that before 1567 these rooms had been assigned to the female servants of the lord, who evidently was in the habit of using the place as a dwelling house."

Leaving the cloister and its surrounding buildings, the old *infirmatorium* was pointed out, and it was mentioned that recently an interesting "find" of an archway and squints in an internal wall was made, and that one side of this feature had been left bare, the wall being that originally dividing the main hall of the infirmatorium from its chapel. Passing the old byre and barn, now adorned with a sham ruin gable, the "Lord's Tower," built in 1488, was visited, and after noticing the modern gateway in the east side of the old precinct wall the party left the priory through the ancient gatehouse.

Various references were made to the excavation of foundations of old walls made in 1888-9 by the late Duke of Northumberland, under the direction of Mr W. H. St. John Hope, for whom Mr Reavell made the plan, and whose account* of the buildings and their history was acknowledged as the authority of various statements made.

* *Archæological Journal*, Vol. xlvii. p. 105.

APPENDIX C.

Mr George H. Thompson of Alnwick has very kindly allowed the following reprint to be made from his own collection of letters of Bishop Percy, and it will be seen to describe in apt language much of the excursion made by the Club nearly a century and a half later.

*A Letter describing the Ride to Hulne Abbey from
Alnwick, in Northumberland.*

A

LETTER TO THE REV. MR. L * * .

ALNWICK, in NORTHUMBERLAND,
August 5, 1765.

Dear Sir,

At parting you desired I would sometimes write to you, and describe whatever I saw most curious in the North. In compliance with your request, I shall at present attempt a description of one of the beautiful Rides we have from this Castle; and shall rather select the following, as it presents views so different from what we have in the South of England, and also as the whole extent of it lies within one of the ancient Parks belonging to this great Barony, called HULNE or HOLNE PARK.

In a right line from the great Gate of ALNWICK CASTLE, a wide handsome road leads to a beautiful Gothic Gateway; which representing, as it were, an outwork from the Castle, is with great propriety ornamented with Battlements and a Portcullus.

HENCE between borders of flowering shrubs, and young plantations of beautiful forest trees, the path winds down a steep romantic Hill; at the bottom of which we cross a Rivulet, and turning to the left descend into a deep Valley. Here we pass under a high Cliff with overhanging sequestered trees, watered at the foot by a clear running Brook, which after a shower affords one or two very fine Water-Falls.

From this Valley we begin to ascend some wild swelling Slopes; whence the eye is thrown to the left over a rough uncultivated Scene, all broken into hill and dale. Passing on, we cross thro' two Gates and enter upon another scene of Heath Ground: a little narrow Valley full of young trees lying to the right; a small swell of planted Ground to the left.

THEN crossing over some corn-fields and upland pastures, thro' which the path very agreeably winds with a gentle ascent, we begin to gain a fine extensive prospect towards the east, terminated by the Sea. In the middle of this beautiful landscape we have a very pleasing view of ALNWICK CASTLE, standing on an Eminence, the foot of which is washed by the River ALNE. And as we continue to ascend the Hill, the swelling Towers of that noble edifice, seen at a distance, make a very striking and picturesque appearance.

PROCEEDING on, we ascend some wild Heath Grounds, and afterwards enter young plantations of Fir-trees, till by degrees the vast Swellings of CHIVIOR begin to appear towards the west, and at length emerge from behind the interposing hills, presenting an immense group of pyramidal Mountains, the highest tops of which are, for the most part, covered with the clouds.

THESE are seen at a great distance to the left; near at hand, to the right, the eye is charmed with the sight of a fine circular Hill we are about to ascend, clothed to its very summit with thriving plantations of young trees of various sorts and forms. This may be termed the Flowery Head of CARMEL; as this Hill* may with great propriety be called, for a reason that will be given below.

* Called by the Country People BRISLEY HILL.

PROCEEDING on, a path to the right leads to a rude Cave amid the Cliffs of the Rocks, which is to be adorned with the Statue of a Hermit, not ill-adapted to the retired situation of this fine romantic solitude.

THE former path being resumed, winds for a quarter of a mile round the Edge of a most astonishing Precipice, which from a vast height, presents a noble wild prospect of wide extent, and at an amazing depth below the Path from which it is seen. The first object the eye looks down upon at the foot of the mountain, is the River ALNE, winding in the most beautiful and whimsical irregularities. This is to be received into a large Lake on the right, which will cover 200 acres of ground. On a little Hill on its margin, are seen, as in a picture held far below the eye, the fine Remains of HULNE ABBEY: more to the left are little Swellings, the hollows of which are fringed with a chain of small rough Thickets. Beyond these rises a vast extent of wild naked Plains, with here and there a single Farm or Plantation scattered like solitary islands in a wide unbounded ocean. Over these the eye gradually rises to where the vast Mountains of CHIVIOR erect their huge conic heads; between the openings of which, the sight gains a glimpse of the still more distant blue Hills of TIVIODDALE in Scotland. The top of CHIVIOR is distant more than twenty miles: the Hills in Tiviotdale near forty or fifty.

TURNING off from the Edge of this high natural Terrace, we cross a little level Plain, and then gain the highest point of this British Carmel. Elevated as its lofty summit is, it is all clothed with young Plantations of evergreen and forest Trees, with spacious Avenues left for the passage of Wheel-Carriages, which easily ascend to its topmost point. Here in a little Plain, surrounded by a Circus of young Trees, is to be erected a noble Tower fifty feet high: which will command an astonishing extent and variety of prospect. Here we see, as in one general map, what we have hitherto admired in detached parts.

To the West we have still a more extensive view of that amazing wild Prospect towards CHIVIOR, which is but faintly described above. Those rude Mountains now appear finely contrasted with a great Variety of Hills and Slopes to the

North, which are cultivated up to their very summits.—To the East are fine green Vales, in the midst of which the Town of ALNWICK, overlooked by the Castle, hath a most picturesque appearance: below it, the River ALNE is seen beautifully winding towards the Sea. But above all the SEA itself most nobly terminates this great Prospect to the East and South, and extends itself all along the Coast down from beyond the FARN ISLANDS to the north; yet not so distant but that the Shipping may be plainly seen many miles from the land, and affords a fine moving picture. On the margin of the Sea the Ruins of DUNSTANBURGH-CASTLE, and the little Port of ALNEMOUTH, are two of the most striking objects.—To the South-west a wild rude Moor, part of the ancient Forest of HAYDON, rises still higher than the Mountain on which we stand; yet clothed on one side to its very top with infant plantations which are at present struggling with the inclemencies of its situation, but promise fair to surmount them. And here and there are interspersed some of those Pyramids of Stone erected in ancient times for Land-marks, and called by the inhabitants CAIRNS or KERNS.

AND now the eye being fully glutted with these great and wild views of nature, we descend from this eminence in order to contemplate other Scenes more confined and more cultivated. For winding down to the bottom of the Mountain, we cross the River, and find that HULNE Abbey, which before appeared so low beneath our feet, is really situated on a Hill of no inconsiderable height, to which we again ascend from the River.

HULNE ABBEY was the first Monastery of CARMELITE Friars in these Kingdoms. The account of its Foundation is thus given by ancient Writers. Among the British Barons, who went to the Holy Wars in the reign of King Henry III. were WILLIAM DE VESCY, Lord of Alnwick, and RICHARD GRAY, two eminent Chieftains in the christian army. Led by curiosity or devotion, they went to visit the Monks of MOUNT CARMEL, and there unexpectedly found a countryman of their own, one RALPH FRESBORN, a Northumberland man, who had distinguished himself in a former Crusade, and in consequence of a vow had afterwards taken upon him the

monastic profession in that solitude. When Vesey and Gray returned to England they strongly importuned the Superior of the Carmelites to let their countryman accompany them home; which was at length granted, upon condition that they would found a Monastery for Carmelites in their own country. Soon after their return, Fresborn, mindful of their engagement, began to look out for a place for their Convent. After examining all the circumjacent solitudes he at length fixed on the present spot, induced, it is said, by the great resemblance which the adjoining Hill bore to Mount CARMEL: And indeed whoever looks into "MAUNDREL's Travels," will find that the Draught of that Mountain given in his Book bears a strong likeness to this before us.

THE above WILLIAM DE VESCY* gave a Grant of the Ground, consisting of 12 or 13 acres in his Park of HOLNE, but FRESBORN is said to have erected the Buildings himself. The Foundation was laid about A.D. 1240, and Fresborn gathering a proper number of Monks, became the first Abbot of the Order, and having presided here with great reputation of sanctity, at length died, and was buried in this Monastery about the year 1274.

THIS Grant of William de Vesey was afterwards confirmed and enlarged with new privileges by his Sons John and William; and when in the beginning of the next century their Barony came into the possession of the PERCY Family, their Charters were confirmed by the successive Lord PERCIES of ALNWICK, some of whom gave additional marks of their favour to this Abbey, as appears by their Charters of 1310 and 1334.

AT length HENRY PERCY, fourth Earl of NORTHUMBERLAND, built in it a fine Tower as a place of refuge for the Monks to retire to, in times of danger. For in the sudden irruptions of the Borderers of both nations, these rude men spared no places or persons however sacred, but laid all waste with fire and sword.

* Not his son JOHN, as it is in Leland, Bale, &c. This appears from the Original Charters, of which I have seen Extracts in MS. as also from Dagdale's Baronage, vol. i. p. 93. 763,

THIS Tower having been preserved more intire than any other part of the Abbey, has been lately repaired by the present noble Possessors, whe are fitting it up in the old Gothic Style, and have shown an admirable taste both in the choice and adaptation of the ornaments. Near it, in ancient English, is this curious inscription :—

In the year of crist Jhū M CCCC LXXXVIII.
 This tow^r was bilded by Sir Hen^r Percy
 The fourth Erle of Northüberlād of gret hoñ & worth
 That espoused Maud y^e good lady full of virtue and bewi
 Daught^r to sr willm harb^rt right noble and hardy
 Erle of Pembrock whos soulis God save
 And with his grace cōsarve y^e bilder of this tow^r.

DESCENDING from these venerable Ruins we wind along a fine romantic Valley, with hanging Woods to the left, and the RIVER ALNE to the right, beyond which rises a rough Hill covered with small Thickets. The River here accompanies the path for near two miles, sometimes approaching near to the Wood, at other times receding from it; one while gliding along in a smooth Canal of clear water, at other times foaming down among Craggs and interposing Stones.

AND first we pass close under a fine impending Wood; whence emerging we enter a green spacious Meadow, here and there interspersed with trees. This is agreeably contrasted with a large succeeding Shrubbery, in the midst of which rises a fine Chalybeat Spring, that will probably be distinguished by a little overhanging Grotto. Passing the Shrubbery, which also affords a large nursery for future plantations, we ford the River, and travel round another beautiful Meadow, from the center of which the eye is carried, to the right, over a succession of fine swelling Slopes, till it rests on the top of CARMEL. Soon after a very pleasing Landscape is seen to the left thro' an opening in the Trees that hang over the River.

Now we enter some beautiful Plantations, which by a gentle rise and fall in the ground, afford a great variety of

pleasing Scenes in beautiful succession, till at length ALNWICK CASTLE begins to emerge from among the trees, and presents itself to the eye more than once in this conclusion of the Ride. Here also the Battlements of the Tower, belonging to the once-famous PRIORY of ALNWICK, are seen below to the left, close embowered amid the trees. As the Tower is the only ancient part now remaining of that once-extensive building, the rest being a meer modern house, it was all that was worth disclosing to the eye. Soon after we regain the Gothic Gateway by which we entered; and now having completed a circuit of six or seven miles, we return back to Alnewick Castle, having to the left a charming view over a country most beautifully diversified.

I HAVE now brought my long narrative to a conclusion, in which be pleased to observe that some things are mentioned not as Objects of Attention, but merely as Landmarks, the better to distinguish and divide the several Parts of the Ride; yet most of the particulars above described, afford great and striking beauties.

I am, &c., &c.

The following copy of a letter by Bishop Percy, undated and unfinished, is also from Mr Thompson's collection, and is interesting in respect of Natural History.

Dear Sir,

In a former Letter I attempted a Description of the Ride to Hulne Abbey, and the very favourable Reception you gave it, encourages me to take up the Pen a second time, and to endeavour to describe to you another Ride from this great Castle to that of Warkworth, a fine Relique of ancient Grandeur situate by the sea side at about eight miles distance.

The face of the country about Alnwick is beautifully diversified with hill and dale, and affords a great variety of

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pleasing Landscapes; through these we travel for about 3 miles, till we come to Leesbury Village, not much more than a mile from the sea; the approach to this Village is through a fine double Row of Ash-trees remarkably large and well grown that over-shade the road, and show that this country is not unfavourable to the growth of trees, notwithstanding its present naked appearance; but this will in a few years be totally altered, and Northumberland bids fair to be one of the best planted counties in England. This village of Leesbury was noted in the last century for the long life of one its Vicars, the Rev. Mr Mackel Wyan, who died about 1659, aged 118: but, what was still more remarkable, about two years before (viz., 1657, he being then aged 116) he had a total renovation of all his faculties: his eyes, which had been so much impaired that for 40 years before he could not read without spectacles, were so much restored that he could now read the smallest print: his hair, which before he had lost, came again like that of an Infant: and his teeth were renewed. A full account of his remarkable case is preserved in the Philosophical Transactions: but I have discovered more Instances of Longevity in this neighbourhood than perhaps are to be found within the same distance in any other part of England.

BEAL FOR HAGGERSTON.

THE SECOND MEETING was held at Beal, on Wednesday, 27th June, when most of the members present availed themselves of the opportunity, kindly offered by Mr Leyland, to visit the famous "Zoo" at Haggerston Castle. In the early morning the weather threatened to be anything but favourable, and consequently there was not such a large attendance as usual. Gradually, however, as the day grew older, the dark, ominous clouds cleared away from the sky, and the sun shone with a brilliance which was heartily welcomed by the members who had ventured to put in an appearance. Shortly after half-past nine they gathered from all quarters at Beal Station, and then those who preferred devoting the day entirely to botany started for Kylvoe, where, by permission of Mr Leyland and Mr Hogg, the moors and crags were accessible; whilst the others—by far the larger number—set out under the guidance of Mr Tait, superintendent of the collection at the Castle, for Haggerston. The party included the President, Mr Arthur H. Evans, Cambridge; Colonel Milne Home, Caldra, Duns, Organising Secretary, and Miss Milne Home; Mr George Bolam, Berwick, Treasurer; Rev. E. Arkless, vicar of Earsdon; Mr E. W. H. Blagg; Mr Robert Brown, Duns; Mr C. B. P. Bosanquet, Rock Hall; Mr and Mrs John Cairns, Alnwick; Mr William Dunn, Redden; Rev. J. Fairbrother, vicar of Warkworth; Miss Forbes, Berwick; Mr A. Giles, Edinburgh; Dr R. S. Gibb, Boon, Lauder; Mr W. T. Hindmarsh, Alnwick; Mr L. Johnston, Oxnam Neuk, Jedburgh; Dr Leishman, Edinburgh; Rev. T. Marjoribanks, Houndwood; Miss Marshall, Berwick; Mr J. L. Newbigin, Alnwick; Mr A. Riddle, Yeavinger; Mr R. H. Simpson, Alnwick; Mr Somervail, Chirnside; Dr Stuart, Chirnside; Mr Stephenson, Berwick; Mr W. G. Twort, Alnwick; Mr

John Tate, Alnwick; Mr R. S. Weir, North Shields; Mr Willoby, Berwick; Mr Joseph Wilson and Miss Wilson, Duns; and Rev. Thos. Varley, vicar of Leadgate.

In respect alike to the area it covers and the variety of its inhabitants, Mr Leyland's establishment is certainly one of the finest in England, and the inspection of his unique collection of animals and birds afforded the greatest pleasure to the visitors. It was just within the park gates, inside a strongly fenced field close to the station, that the first glimpses of the American buffalo were caught, and, truth to say, these shaggy monsters, with their great heads and powerful shoulders, were objects of the keenest curiosity. Like the Redskin, the buffalo is, in America, rapidly becoming extinct, and Mr Leyland is making the experiment, which is proving successful, of perpetuating the species by breeding from the animals in confinement. He procured his first specimen of a pure-bred bison in 1890, and in the course of his travels he secured sixteen altogether. Now, with the cross-bred animals, obtained chiefly by mating the bison with the Highland cows, there is a herd of over thirty of these prairie beauties. They stand the English climate, tantalisingly changeable as it is, very well on the whole; but the cold dampness of the winter is rather trying to them, whilst the richness of the herbage also occasionally gives rise to anxiety. There are stoutly built houses constructed for their use in the pasturages, but they live out of doors as a rule, and may be easily identified from the train by any passengers going north who choose to cast their eyes to the left immediately Beal Station is passed. On Wednesday one of the lady visitors endeavoured to get a snapshot of a handsome bull, but immediately on sighting the stranger he careered wildly over the field with head down, giving the visitors the notion that they were on much the better side of the wall. However, the fair photographer succeeded in obtaining a picture to her satisfaction a moment later, when a half-dozen magnificent North American stags and hinds came under inspection. One of the stags is ten years old, and another five years. Mr Leyland brought them from Wales to Haggerston. Proceeding along the pleasant roads of the estate, shaded by stately elms, limes, and other fine trees, the foliage of which looked most

refreshing after the recent rain, nine graceful nyalghaus next came into view, looking with startled eyes on the disturbers of their privacy; and then quite a large number of white-tailed gnu were seen. Immediately on the approach of the party these animals, which are natives of South Africa, and often vicious too, demonstrated their remarkable agility by giving a very vigorous exhibition of running and jumping. In another enclosure were nine sleek Brahmin cattle, which are held in the deepest veneration by the Hindoos. Next some exceedingly pretty spotted Indian deer of the Axis tribe were examined with admiration; and then several Japanese stags found favour, as well as Reeve's deer from China—a beautiful little creature only 18 inches high.

The lake on the estate could not, unfortunately, be opened to the visitors, and consequently most of the numerous varieties of birds were missed, but several ostriches were seen, as well as an American emu, who had eight eggs under her, and flocks of Canadian and Chilian geese and Crown cranes from South Africa. Another most interesting sight was that of several kangaroos, which called forth much comment. Indeed, the novel and comprehensive glimpses of rare animal life charmed and instructed everyone.

At the close of the visit Mr Leyland and Mr Tait (his superintendent) were heartily thanked, the former for giving the Club permission to view his collection, and the latter for his able and intelligent conduct of the party.

Subsequently the members dined at the Avenue Hotel, Berwick, and thus brought to a close a most enjoyable day.

Botanical Notes.—By the President.

After leaving Beal Station at about 9-30, the party, consisting of the President, the Treasurer, Dr Stuart of Chirnside, Mr Somervail of Broomdykes, and Mr Anderson of Duns, drove up to the Bogle Houses at Kyloe, and proceeded to work along the range of basaltic crags for plants. They succeeded in finding *Polygonatum officinale* and one very small tuft of *Asplenium septentrionale*, while *Euonymus*

europeus, and other well-known plants of the district were also seen. Wheatears, Stock-doves, and Jackdaws were the most plentiful birds, but several Curlews and a Cuckoo were in evidence. The Stock-doves still had eggs in two or three instances. Mr Hogg's keeper met the party half-way along the crags, and Mr J. Carr of Hetton Hall bicycled up to the western end of the range to join them. Having completed the investigation of the Flora and Fauna of the cliffs—and failed to observe any Lepidoptera of importance—a move was made for the top of Black Heddon Hill, where, not far from the cairn, was the spot at which mill stones used to be cut at some unknown date. Several partly cut stones were still *in situ*, but in most cases merely the holes were visible from which the stones had been removed. The rock is sandstone, the whole of the ridge of Black Heddon being of the same formation. Near the same spot several specimens of the Beautiful Yellow Underwing (*Anarta myrtilli*) were captured, and a few other moths seen, including the Wood Tiger (*Nemophila plantaginis*). The Bog Pimpernel (*Anagallis tenella*) was found at the usual spot near the road on returning, and the Petty Whin (*Genista anglica*) was growing close by. Four members of the party arrived from Haggerston at the crags just in time to see one of the old camps, possibly British, at the top of them, after which a move was made for the station.

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HOLY ISLAND.

Holy Island was visited on Friday, July 6th, by members of the Architectural and Archæological Society of Durham and Northumberland, and by members of the Berwickshire Naturalists' Club.

The latter Society was represented by Colonel Milne Home, Organising Secretary; Mr G. G. Butler, Secretary, and Mrs Butler; Mr Geo. Bolam, Treasurer; Rev. John Burleigh, Capt. Forbes, R.N., Miss Forbes, Mr Arthur Giles, Sir A. Buchan Hepburn, Rev. A. Jones (Stannington), Rev. Dr Thomas Leishman, Rev. H. M. Lamont, Miss A. M. Milne Home, Mr W. Maddan, Rev. Thos. Marjoribanks, Miss Marshall, Major Macpherson, Mr W. B. Swan (Duns), Mr David G. Simpson, Mr and Mrs James A. Somervail, Mr E. Willoby, Mr Joseph Wilson, and others. The Architectural and Archæological Society's members present included the Rev. Canon Greenwell, Durham, President; Mr Hodgson, Alnwick; Mr T. Tate, Alnwick; Rev. L. J. Wilkinson; and many others.

At half-past nine the Berwickshire contingent left Berwick Railway Station in a brake, which conveyed them to Berwick Quay, where they got on board the "Osprey," placed at the disposal of the Club for the day by the Tweed Commissioners. The party, after a pleasant journey, reached their destination shortly before mid-day. The members of the Architectural and Archæological Society travelled to Beal by train, arriving there at eleven o'clock, a saloon and other carriages having been provided by the North-Eastern Railway Company. The distance intervening between the station and the island was traversed in brakes, so far as the majority of the company was concerned. Others who walked found a somewhat interesting experience in negotiating the long stretch of sand which lies between the mainland and the island. The tide had not entirely withdrawn, and shoes and stockings had necessarily to be taken off. Without mishap, however, and not without some pleasure, the day's rendezvous was reached, and the programme arranged was at once proceeded with. The weather, in the meantime, had occasioned anxiety. The early sunshine had given place to an overcast sky, and some rain had fallen.

The visitors discovered much to interest them. The ruins of the priory afforded a special attraction, and Canon Greenwell's observations regarding them were listened to with exceptional delight. No one knows more of the stirring history of Lindisfarne than the reverend gentleman. His quotation from Sir Walter Scott's "Marmion" formed a fitting preface to that which followed:—

"For with the flow and ebb, its style
Varies from continent to isle.
Dry shod, o'er sands, twice every day,
The pilgrims to the shrine find way.
Twice every day the waves efface
Of staves and sandall'd feet the trace."

This visit, Canon Greenwell said, was the third so far as his Society was concerned. From Holy Island, he explained, the whole of the northern part of England was Christianised. King Oswald brought from Iona, where he himself had attained Christianity, the great man Aidan, who established a bishopric at Lindisfarne. It formed a branch of the Celtic Church, and differed from the Christianity which came from Rome. The island seemed a very unlikely spot on which to settle missionaries who were going to Christianise a very large district round about. But there were more reasons than one why that was done. The defensive position of the place was one reason. It was practically an island. A still greater reason was its close proximity to Bamburgh, the royal residence; and perhaps a yet greater reason than all was its resemblance to Iona. Colman was the last Celtic bishop, and he occupied the position from 661 to 664. In the latter year a synod took place at Whitby under Osway, King of Northumbria, and some very important matters were determined. The two principal things were the time of keeping Easter and the position of the tonsure. The Celtic practice was to shave the front of the head, while the Roman practice was to shave the top. But there was no doubt whatever that what was really at the bottom of all the dispute was a desire to bring the Celtic Church into complete obedience and union with the great patriarchal Church of the west, namely, Rome.

Wilfrid, the advocate of the Roman rite and custom, carried his point, and the Celtic observances were done away with. Colman returned to Iona, and nearly the whole of the monks withdrew with him. Passing on to speak of Cuthbert, Canon Greenwell said his opinion was that that great man was not of Irish birth, but that he belonged to a Teutonic people settled in this part of the country—that he was born in the south of Scotland, or at all events lived there in early life. He went to Lindisfarne from Melrose. Ultimately he lived as a hermit on one of the Farne Islands, where he died at the comparatively early age of fifty years. In spite of the good effect the heremitical life of St. Cuthbert might have had, Canon Greenwell believed that it would have been much better had he continued his missionary work and had not withdrawn himself from among his people for the long period of eight years.

After describing the manner in which the body of St. Cuthbert was removed to Durham, where it still lay, Canon Greenwell made a very interesting statement respecting the remains of the coffin now in the Library at Durham. He had endeavoured, he said, to put the coffin together. After several failures, owing to the tenderness of the wood, he had, at length, got it into such a condition that any person could see what the coffin had been. He was waiting for warm weather to enable him to work in the apartment where it lay, and to fix it in a case prepared for it. It was covered with sculpture. Upon the lid was a figure of Our Lord, surrounded by the four evangelistic symbols, with the names, one in Runic characters. On one side were figures of Archangels, and on the other were fourteen figures, including the twelve apostles. On one end there were two archangels, and upon the other was the Virgin, with Christ upon her knees.

Canon Greenwell's remarks were brought to a rather abrupt termination by the announcement that luncheon—kindly provided by Sir William Crossman—was ready. The excellent fare having been duly enjoyed, a hearty vote of thanks was accorded to Sir William and Lady Crossman for their hospitality, Canon Greenwell proposing and Colonel Milne Home seconding the proposition. Sir William Crossman suitably responded.

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The party then assembled within the Priory ruins to listen to a description of the place by Mr C. C. Hodges, who is thoroughly conversant with his subject. He traced the history of the Priory from the beginning. A wooden thatched church, he said, first occupied the site. He had a great deal to say respecting the edifice of which the ruins remain, and also the domestic buildings attached thereto at one time for the use of the monks. There was no trace of a Chapter House. After the dissolution of the monasteries the private buildings were turned over to the wardens of the Eastern Marches, and were used as a Government store house for a considerable time. At length they fell into ruins. The main reason why they were not completely destroyed at the time mentioned was this, that there were no important buildings on the island, and these ruins were, therefore, of great use to the authorities.

From the ruins a move was made to the church, where Sir William Crossman read an able and exhaustive paper on "The Bishops of Lindisfarne," and was thanked for it on the motion of Mr R. O. Heslop.

The Vicar of the parish, the Rev. D. Bryson, pointed out several matters of much archæological note within the walls of the early English church.

Altogether the day's proceedings proved enjoyable and instructive. The general arrangements were excellent, and neither hitch nor accident of any kind occurred. With the exception of a slight shower, no rain fell during the visit to the island. A cold wind, however, prevailed.

BURNMOUTH.

THE THIRD MEETING was held at Burnmouth and the immediate district, on Thursday, 19th July, and a pleasant day was spent. To those members of the Club who are interested in geology, no better spot could be chosen for a meeting, as the coast of that part of Berwickshire abounds in all that is best and most interesting in British geology, and, besides, those attending the meeting had the guidance of Mr Goodchild, of the Geological Survey, F.G.S., F.Z.S., who has been for many years in charge of the Collections of Scottish Geology and Mineralogy in the Edinburgh Museum of Science and Art.

The weather was all that could be desired for an outdoor investigation. The gathering was not quite so large as some of the recent meetings of the Club have been, but there were many circumstances which might account for the small attendance. Though few, however, those present were thoroughly in earnest, and highly appreciated Mr Goodchild's varied and interesting remarks regarding the different rocks to be found in the neighbourhood.

Those present were:—Mr A. H. Evans, M.A., F.Z.S., Cambridge, President; Colonel D. Milne Home, Caldra, Duns, Organizing Secretary; Mr G. Bolam, Berwick, F.Z.S., Treasurer; Mr Thomas Darling, Mr A. Darling, and Mr

A. D. Darling, Berwick; Hon. and Rev. Canon Ellis, Bothal Haugh; Captain Forbes, R.N., Berwick; Mr Goodchild, Edinburgh; Mr W. T. Hindmarsh, F.L.S., Alnwick; Rev. Ambrose Jones, Stannington; Mr J. S. Mack, S.S.C., Coveyheugh; Captain Norman, R.N., Berwick; Mr J. L. Newbigin, Alnwick; Mr J. A. Somervail, Broomdykes; Dr Stuart, Chirnside; Rev. Dr Sprott, North Berwick; and Mr Joseph Wilson, Duns.

The majority of the company assembled at Berwick, and drove to the place of rendezvous. The road traversed presented many interesting features. Little over a mile from Berwick, the foot of Halidon Hill was noted, and further on the trim well-kept grounds of Marshall Meadows were passed in view. Captain Norman, R.N., who was responsible for the meeting, took charge of the company, and called their attention to the various points *en route*. Lamberton Toll, the scene of so many runaway marriages, was seen, but the house and surroundings of the cottage in which the nuptial knot has been tied in so many cases, have altered greatly in appearance of late years, and now wear a neat and modern look. Nearing Burnmouth, Ross Dean (in which some interesting botanical specimens are to be found) was noted in passing, and further on Chester Hill, rising 500 feet above the sea-level, and topped with red sandstone, was pointed out. On the arrival of the Berwickshire train, the company set out down the brae in the direction of the village of Partonhall.

About mid-way down, Mr Goodchild gave a brief address, which he illustrated by diagrams, and reviewed all the salient features to be found within reach of the ground to be covered in the day's excursion. He said: There is no part of the Berwickshire coast, full of interest as it all is, which has preserved records of so many geographical changes as the coast at Burnmouth. If for no other reason than this, the Berwickshire Naturalists have done well to act upon Captain Norman's suggestion that it should be made the chief object of one of the excursions this year.

The oldest rocks seen here are exposed in the railway cutting on both sides of the station, and are most admirably displayed along the cliffs to the north. They

were originally beds of marine sediment, alternately sand, sandy mud, and clay, deposited upon an ancient sea bottom while the land was undergoing a very slow subsidence. This event dates back many millions of years in the past, long prior to the first appearance of any but the very lowest forms of life now living upon the earth; and, of course, long before any geographical features now anywhere in existence had come into being. Geologists find it convenient to give distinctive names to great groups of rocks, and those in question belong to the Silurian Period, and to that early part of it which is typically represented by the rocks near Gala, whence the name Gala Rocks is now usually applied to those oldest rocks which form the northern part of Berwickshire, and which extend south-westward, forming the southern uplands of Scotland, to the coasts of Galloway and Carrick.

Near the close of the period, and after the oldest rocks seen at Burnmouth had been buried beneath a pile of sediments of much the same kind, some eight or ten thousand feet in thickness, a slow upward movement of the earth's crust set in. The old sediments, at first buried thousands of feet below the surface, after being slowly compacted into hard rock, were gradually squeezed from their original state of a pile of horizontal sheets of sediment into a series of folds—a process which one can readily imitate on a small scale, and in a few seconds, by placing two or three leathern straps one on the other, and then pressing the opposite ends towards each other. If the experiment is performed carefully it will be easy to bend the straps first into one simple fold, and then by continuing the process to end by plicating the straps into a series of puckers of any degree of complexity. Lateral pressure, steadily applied, through long millions of years, to the old sediments under notice, first gently arched them upward, raising them gradually above sea-level, and ended by crumpling the whole mass into a puckered and highly-convoluted series, in which condition these Gala Rocks may be seen along the Berwickshire coast now. Several important results ensued as a consequence of this crumpling and upheaval of the old Silurian sediments. At an early stage

the Silurian rocks were slowly upheaved into a great upland area, which rose to several thousands of feet above the sea-level. Its precise position is not known; but it probably reached its highest levels along a line which may be said to coincide with that which now joins Dunbar and Ballantrae. The upheaval affected a very large area, and what is now Berwickshire was then distant, perhaps, some hundreds of miles from the nearest sea. As a consequence of these continental conditions the rainfall began to be scanty and irregular; and, taking one year with another, it is probable that not more than about ten inches of rain fell per annum, and even that was usually precipitated only during very heavy thunderstorms. No vegetation could thrive under these climatal conditions; and, as a necessary consequence, animal life dwindled down to a minimum, and to be probably represented only by a few highly specialised forms of fish life, adapted (like the Lung fish of Queensland) to live in such lakes as could hold out through the long periods of drought. In other words, desert conditions set in. It was under these geographical conditions that the Old Red sedimentary rocks seen about Ayton were formed. These conditions prevailed for a period of sufficient length to permit of the old mountain range being gradually wasted away. The products wasted from the mountain areas were gradually spread out by torrents far and wide, and formed the sandstones and conglomerates of which these rocks partly consist.

Towards the middle of this period of continental conditions earthquakes began to affect the district, and they gradually increased in violence and frequency until they at last ushered in volcanic conditions. Here and there all over the district small volcanoes broke out, and these grew up in course of time and eventually formed a great connected series, which extended over a large part of North Britain. It was from these volcanoes that the rocks that now form the Cheviots were laid down. The same volcanoes have left traces of their existence at many places in Berwickshire; as, for example, at St. Abbs' Head and Coldingham, at Eyemouth, and even at many places around Burnmouth. At the last-named place they are now represented only

by a series of dykes of porphyrite, all the rest of the vast pile of volcanic rocks which formerly covered the district having been entirely removed. These porphyrite dykes are well exposed near the railway station at Burnmouth; they are admirably represented by a typical example, which crosses the dene leading from the school to Partonhall, and they are equally well shown in connection with the striking coast features known as the Gull Rock and the Breeches Rock, to the north of Burnmouth. Good examples of these porphyrites are also to be seen at Lamberton.

After a long time the volcanic activity died out, and the old volcanoes were gradually wasted away, leaving only some few disconnected fragments of the lavas and tuffs. Besides the porphyrite dykes there now appear at the surface several masses of granite. These were originally formed at the roots of the old volcanoes, and they owe their present exposure at the surface to the combined effects of upheaval and denudation, by which all the thick mass of rock which formerly overlay them has been gradually removed, and washed sea-ward to form newer strata elsewhere.

There were many periods of disturbance during the development of the events just noticed, which completely altered the face of the country, time after time.

Near the close of the great desert conditions the Upper Old Red Sandstone was laid down. It was formed in very much the same manner as the older Old Red Sandstone had been before it. Remnants of this Upper Old Red are seen at the foot of the cliff below Burnmouth, as well as at Chesters, Sioocar Point, and many other places in the neighbourhood.

After a time, the land once more began to subside; the sea margin approached nearer and nearer; rain began to fall in fair quantity, and with increasing regularity; vegetation gained a footing; and the old desert conditions gradually passed away, giving place to climatal conditions which were as different as they could well be from those which preceded them. It was under these conditions that the Carboniferous rocks were found. First of all, when the climate had really begun to change for the better, the

Tuedian Beds (better known as the Lower Limestone Shale or Ballagan Beds) were formed. These probably overspread nearly the whole of what is now Berwickshire, and indeed they were deposited over a large area which extended over most of Great Britain and Ireland.

Then followed a long period during which the land continued slowly to subside, while at the same time the delta of a great river draining a continental area lying to the north-west of Britian was slowly built up of pile upon pile of sand, silt, mud, and vegetable matter over the present area. Broken and disturbed remnants of these ancient delta deposits are now seen turned bottom-upwards in places along the shore at Ross Point, and elsewhere in the neighbourhood. At a somewhat later period the land began intermittently to subside to greater depths, the depth of water increasing in a south-easterly direction. It was under these deeper-water conditions that the limestones were formed. The earliest rock of the deeper-water type now occurring along the Berwickshire coast is the Lamberton or Dun Limestone. In the intervals between the deeper-water episodes sandstone, shale, and coal seams were deposited on the sea floor.

At a period still later the Upper Carboniferous Rocks were laid down here, still in connection with a delta at the mouth of the large river already mentioned as flowing towards deeper water from the north-west. There is reason to believe that the total amount of subsidence here during Carboniferous times amounted to some ten or twelve thousand feet. It will be evident from a consideration of these facts that the strata seen at Ross were at one time nearer the centre of the earth by two miles or more than they are now. Most of Berwickshire was covered with the same vast pile of sediments, which for a long time remained in horizontal layers.

At last came an end to the downward movement to which deposition was due. Then ensued a renewal of the geographical changes which had affected these parts prior to Carboniferous times. The old sediments were steadily folded—though to nothing like the same extent as on the former occasion—mountain masses were gradually squeezed

up, so as to rise far above the sea-level, Continental conditions set in, and Desert conditions returned, and affected Britain for the last time in its geological history. As the newly-formed strata were slowly forced upward they underwent more or less disturbance and faulting. The process of upheaval was a slow one, so slow, in fact, that the waste of the upland areas nearly always kept pace with the rate of elevation. It was the materials laid down under these conditions, across the worn and wasted edges of the disturbed strata of older date, which afterwards formed the New Red Rocks. These were laid down on an irregular surface formed of rocks of all the ages older than themselves. They probably overspread the whole of Berwickshire. Infiltrations from these New Red Rocks have produced very material changes amongst the strata upon which they originally lay, and though most, if not all, of the New Red has been wasted from the surface of Berwickshire, marks of its former presence are to be seen in the deep-red staining of the sandstones. This colouration forms a conspicuous feature in connection with the Carboniferous sandstones of the Berwickshire coast, and is well seen at Ross, Lamberton, Marshall Meadows, the Burgess's Cove, and other places. The same chemical infiltrations, carrying down solutions of carbonate of magnesia, have converted many of the Carboniferous limestones into dolomite. Some of them, indeed, have been further changed into hæmatite. Traces of all these features are well seen at the places visited by the Club on the present occasion.

At a much later period in British history, another great volcanic episode occurred. There is no reason to think that the volcanoes themselves actually occurred here. Nevertheless, vast quantities of eruptive materials, chiefly basalt, ate their way upward through the older rocks in many parts of Britain during this volcanic period; and two or three basalt dykes, which are probably, or almost certainly, of this age, intersect the Carboniferous rocks near Ross Point, and at other places along the coast near to Berwick. Of the later changes which have given rise to the present features of the Berwickshire coast much can be said, but the subject is

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too extensive to be dealt with in the course of a short address like the present.

The various strata were explained by Mr Goodchild, and examined by the company, after which the journey was continued to the beach, where the different and interesting formations of the various kinds of rocks were observed. Afterwards the company moved on in the direction of Ross, where Mr Goodchild continued his highly interesting observations.

Returning to the brakes once more, the members drove to Lamberton Shields, where another halt was called, and a visit paid to the cliffs, where is to be seen a peculiar and interesting formation of rock. Some remarkable pseudomorphs after Pyrites in Hæmatite or Turgite, were pointed out to the visitors. The company afterwards returned to Berwick. The excursion was greatly appreciated by all, and it was rendered all the more pleasant by Mr Goodchild, whose remarks and explanations of the different strata were of the most lucid character.

After returning to Berwick, the members dined together in the Avenue Hotel.

ABERLADY AND GULLANE LINKS.—By Mr George Fortune,
Duns.

THE FOURTH MEETING was held at Aberlady, on Wednesday, 29th August. The day being fine one party met at Longniddrie, and drove to Seton Castle and Church. The first portion visited being the Collegiate Church, Colonel Barstow, the tenant, along with Colonel Milne Home, led the way to the church. Colonel Milne Home read a short notice of the church prepared by George Seton, Esq., Edinburgh, one of the descendants of the Setons, describing the church, from which it appears that the church was in existence in 1390, at which date Katherine Sinclair, wife of William Seton, "Biggit ane yle on the south side of the Paroch Kirk of Seton of fine estlar, pendit and theckit with stane with ane sepulchar thairin quhair she lyes."

"Further, George, second Lord Seton, in 1493, made the church collegiate. He built the Sacristy in the reign of James the IV., and died in 1507, and was buried near the High Altar.

"George, third Lord Seton, who was slain at Flodden, covered the 'queir' of the church with stone, and Jane Hepburn, his widow, took down the 'Yll Kirk' built by Dame Katherine Sinclair, and 'biggit the steeple as ye see it now to ane great height swa that it wants little of

completing.'” From these quotations it appears the church was probably re-built about the end of the fifteenth century, and added to by the second Lord Seton. The transept tower and spire would appear to have been erected by the Dowager Lady Seton in the 16th century, after her husband's death at the battle of Flodden.

There appears to be no doubt that the church was rebuilt or restored at the date it was made collegiate, and it is quite in keeping with the style of other churches of late pointed Gothic of the fifteenth and sixteenth centuries, such as that of King's College, Aberdeen, and Haddington Church. The church was dedicated to St. Mary and Holy Cross, and was designed as a complete cross without aisles, having a central tower and spire at the intersection of choir and transepts. The nave has never been built. The north and south end windows of the transepts are large, and divided into two by a large stone mullion, and the rest of the window is filled with stone tracery. The other windows of the church are smaller, and filled with centre mullions and tracery. The spire, which is broached, is uncommon in Scotland, and has never been finished. In 1544 the “auld enemies” of Scotland burnt and destroyed the castle, and consumed the woodwork of the Kirk, and carried off the bells, organ, and other moveables. The church is carefully kept, and too great praise cannot be given to the family of the Earl of Wemyss and March for the careful and conservative manner in which the church has been preserved and restored. The next places visited were the old gardens and orchard, which were famous in their day, and still are so, for their fruit. Large portions of the garden walls are very old, and date from the time of the castle.

There is an old fosse all around the east, north, and west sides of the present building—mis-named Seton Castle. This building was erected by Mackenzie of Portmore in 1770 or thereabouts, and more resembles an asylum than a mansion house. The once magnificent building which stood upon the site of the present mansion was considered the finest building of its kind in Scotland. A castle had long occupied this site, which was greatly destroyed in 1544 by the Earl of Hertford's invasion. The famous building

which was so much admired was erected by George, Lord Seton, and this building appears to have been erected in the Elizabethan style of architecture, similar to Winton House and Heriot's Hospital. Seton Castle was frequently the residence of royalty, having been occupied by Mary (Queen of Scots), James VI., and Charles I. It was in East Lothian that the Setons first appeared as a family.

In 1124 De Sayton or Seton obtained grants of land in East Lothian, the family becoming more and more powerful in the battlefield, as well as in the more intricate paths of statecraft. They were always a loyal race, true to their King and Queen. When Mary escaped from Loch Leven, one of the first barons to join her was George, seventh Lord Seton, who paid the penalty of his chivalrous loyalty by being exiled; and it was the same steadfast adherence to the Royal House of Stuart which produced the downfall of the family in 1715. The then Earl of Winton threw in his fortunes with those of the dis-crowned king, and paid the penalty of his rebellion by the entire confiscation of his extensive estates.

As time is ever on the wing, the next move was made for Gosford, the seat of the Earl of Wemyss and March. After a beautiful drive, the grounds were entered by the west lodge, a building of strange and striking design. This lodge was designed by the eminent artist and architect, the late Mr R. W. Billings, author of the "Baronial Antiquities of Scotland." The lodge is sometimes called "Billingsgate," after the architect. The park and policies are most beautifully laid out, and designed so as not to have any fences in view. The landscape gardening has been most tastefully carried out, with clumps of trees here and there. After a drive of a couple of miles or so, the mansion of Gosford appeared in view, and it may well be named the palace of East Lothian. The extent of the house is palatial. The building was originally designed by the Brothers Adam, and latterly was considerably enlarged and beautified by William Young, Esq., architect, London.

The company were received by the Earl of Wemyss and March, who personally conducted them through the beautiful loggia, staircase, hall, dining rooms, drawing rooms, business

room, billiard room, and library. His Lordship pointed out the valuable and artistic treasures, paintings by Correggio, Tintoretto, Murillo, Botticelli, Rembrandt, Rubens, Jordaens, Paul Potter, and others, as also the rare cabinets and cameo portraits, including one of "Bonnie Prince Charlie": and marble busts, too, of some of the Cesars, with some of the rare sculptured wheel heads in marble from Venice. He further exhibited an implement of his own invention, to be used by soldiers as part of their kit. It can be used as a spade, a pick, an axe, saw, and shield for protection from bullets. It is understood that this ingenious instrument will be adopted by the Army, and become part of every soldier's kit.

After thanks to the Earl for his great kindness, the party was conducted over the grounds, which are of rare beauty and of great extent, along the side of the lakes, where the various water fowl were noted, and on to the gardens, which are large: the vineries, peach and orchard houses were then visited, and the contents much admired.

The party afterwards drove to Aberlady Church, and under the guidance of the Rev. J. Hart, minister of the parish, the church was inspected. The tower and part of the church is old, and of Norman architecture; the rest of the church is of transition period and of much later date. The church has been most carefully restored, and does credit to both the heritors and architect. There are beautiful stained glass windows in the chancel end of the church, one being a copy from the picture by Botticelli, in Gosford. There is a most beautiful recumbent statue tomb in memory of the mother of the present Earl (by Boehm, the eminent sculptor). The pulpit is an open one, of white marble, with porphyry pillars. The baptismal font is also of white marble, with similar pillars. The seating of the church is of oak, and plainly fitted. There is a marble tablet on the north wall in memory of Lieutenant Charteris, who was killed at Balaclava.

After leaving the church, the beautiful gardens at the manse were visited and much admired. The next move was made for Luffness, the seat of Henry W. Hope, Esq. Luffness is a small but very interesting example of a Scotch-

Baronial mansion, part of which has been fortified, and the skyline is very picturesque. The grounds are surrounded by ditches and earthworks raised by the French General, De Thermes, in 1549, who erected the fort for interrupting the supplies of the English garrison at Haddington.

Mr Hope kindly pointed out the various points of interest about the house—the old armour, pictures, and cabinets—with which the company were much pleased. The flower garden and grounds were next visited and much admired. The monastery and church of the Red Friars of Luffness were visited; these are in the grounds. The foundations are all that mark the site of these buildings, excepting a pointed doorway into the choir, and a small piece of wall with a recess and a much-worn effigy, supposed to be that of the founder. There are also the remains of a monumental slab, with an old letter inscription to Kentigern Hepburn of Wauchton, who lived in 1498. There are arms on the shield, in the centre of the cross, and these are the arms of the Hepburns.

The old fish ponds of the monks were pointed out near the ruins of the old monastery. This having completed the day's programme, the party drove to Aberlady and dined in the Golf Hotel.

The following met together at dinner:—Mr A. H. Evans, M.A., F.Z.S., Cambridge, President, and Mrs Evans; Colonel D. Milne Home, Caldra, Duns, Organizing Secretary; Mr George Bolam, F.Z.S., Berwick, Treasurer; Mr John Caverhill, Jedneuk, Jedburgh; Mr I. H. N. Evans, Cambridge; The Hon. and Rev. W. C. Ellis, Bothal Haugh, Morpeth; Mr G. Fortune, Kilmeny, Duns; Mr J. Ferguson, F.S.A. (Scot.), Duns; Capt. J. A. Forbes, R.N., and Mr Louis Forbes, Berwick; Mr David Gilchrist, Musselburgh; Rev. D. Hunter, D.D., Galashiels; Mr G. Henderson, Upper Keith; Mr and Mrs Henderson; Miss Irvine; Rev. R. C. Inglis, Berwick; Mr J. Park Inglis; Mr Stevenson Macadam, Edinburgh; Major J. F. Macpherson, Edinburgh; Mr Wm. Maddan, Berwick; Capt. F. M. Norman, R.N., Berwick; Mr H. Paton, Edinburgh; Mr H. Rutherford, Fairnington Crag, Roxburgh; Mr Charles Rea, Halterburn; Dr Stephen; Capt. Geo. Tancred, Weens; Mr Robt. Thin, Edinburgh.

Botanical and Entomological Notes.—By the President.

The party, consisting of the President, Capt. Norman and Mr George Bolam (Berwick), Messrs W. Evans, Goodchild, and Mears (Edinburgh), Mrs Evans and Mr Ivor Evans (Cambridge), started from Gullane Station for the seaward portion of Gullane Links. Nothing of interest was observed until the golf course was reached, but there Mr W. Evans called attention to a considerable number of the smaller insect forms, including *Aculeata* and *Diptera*, while a few of the commoner butterflies were seen. *Cynoglossum officinale*, *Erythrœa centaurium*, *Gentiana campestris*, and *G. amarella* were picked at the same place. Along the rocks on the Aberlady side of the links Mr Goodchild pointed out a considerable number of agates, partially imbedded in the rock, and explained to the members present the geological formation of the coast line. *Parnassia palustris* was exceptionally plentiful and profusely in flower over the marshy parts of the links, which were unusually dry. *Schœnus nigricans* was the only plant of importance picked in the bogs, as there was no time to work the small loch near the shore for botanical specimens. After crossing the Peffer Burn, a considerable amount of *Blysmus rufus* var. *bifolius* was observed, mixed with the typical variety. It was also gathered at the station near Aberlady Church, where it was originally discovered in 1894.

AIKENGALL FROM COCKBURNSPATH.

THE FIFTH MEETING was held at Cockburnspath for Aikengall, on Wednesday, 26th September. Several members who had particularly wished to be present were unavoidably detained at the last moment.

Those present were as follows:—Mr Evans, M.A., F.Z.S., Cambridge, President; Colonel Milne Home, Caldra, Duns, Organizing Secretary; Mr Robert Brown, Duns; Mr Ferguson, F.S.A. (Scot.), Duns; Mr Hood, Miss Hood, Mrs Hood, and Miss Gibson, Linnhead; Mr George Hardy and Mrs Hardy, Old Cambus East Mains; the Hon. Frank Hume, Virginia, U.S.A.; Mr J. M. Loney, Edinburgh; Mr Somervail, Broomdykes; Mr Joseph Wilson and Miss Wilson, Duns; Mr John Wilson and Miss Wilson, Chapelhill.

Members from a distance arrived at Cockburnspath Station at 8-30 a.m., where a brake awaited them, and, after a short stay at the Hotel, drove up to Stottencleugh, alighting *en route* at Oldhamstocks Church, where they were received by the Rev. W. M. Hutton, minister of the parish, who drew their attention specially to the "Hepburn Aisle," a structure attached to the east end of the church, which apparently had been the chancel. The aisle was connected with the Hepburns of Blackcastle, of which property nothing now remains but a field of that name on a hill close to the church.

OLDHAMSTOCKS CHURCH.

A description of the church of Oldhamstocks and its more noteworthy features was contributed by Dr Hardy to the Club's Proceedings for 1878 (pp. 407-8), and it is only needful to supplement it by a few additional particulars. By far the most interesting portion of the structure is the Hepburn burial aisle, adjoining the east gable. It occupies the site of the old chancel; and possibly the walls, the vaulting, which is semicircular, and even to some extent the roof, which is composed of overlapping stone slabs, may be original. The entrance doorway in the south wall is an insertion of the seventeenth or early eighteenth century. The most striking feature is the pointed and traceried window in the east wall. It is no doubt ancient, and may date from the beginning or middle of the sixteenth century. The tracery, which forms three lights, with cusped heads in the lower half of the window, and three quatrefoils of elongated form in the upper part, is of a different stone from the rest of the building, and is somewhat rude in execution, but the general effect is not displeasing. The monials are much wasted, as are also the roughly sculptured heads which form the terminations of the label above. The window is about $4\frac{1}{2}$ feet wide at the sill, the height to the apex being nearly 8 feet 4 inches. The aisle itself measures externally about 20 feet by 17 feet 8 inches. (Plate XI.)

Drawings of the heraldic panels inserted on each side of the window will be found on Plates XII. and XIII. The shield on the south side is divided *per fess*, instead of *per pale*, which is not a usual arrangement. The initials T.H., and M.S., are probably those of Thomas Hepburn, rector of Oldhamstocks, at the time of the Reformation—of whom some account is given in the extracts of Scott's *Fasti* below—and of Margaret Sinclair, his wife. They are undoubtedly original, but this cannot be said of the date, 1581, incised on the lower part of the stone, which is a later and probably quite modern addition. The panel on the north side bears, *per pale*, the arms of Thomas Hepburn, one of the Hepburns of Blackcastle, who was parson of Oldhamstocks

from 1642 to 1671, and of his wife, Margaret Paterson. She survived him, and was living in 1702. Dr Hardy, apparently following Nesbit, believes the lady to have belonged to the family of Paterson of Bannockburn, but it is to be observed that Nesbit states that the chief on the shield of that family was embattled, whereas here it is quite plain.

Extracts from "Fasti Ecclesiae Scoticanæ." Pages 376-77.

ALDHAMSTOCKS, OR OLDHAMSTOCKS.

1562.—Thomas Hepburn was one of those thought apt and able to minister by the first General Assembly, 20th December 1560. He was appointed by the Assembly, 4th July 1562, to preach in the unplanted Kirks of the Merse, month about with two others. In 1567, he waited on Mr John Craig, formerly of Holyrood House, and requested his services in proclaiming Queen Mary in marriage with the notorious Earl of Bothwell; was admitted Master of Requests 17th May same year, and in Aug. following had been forfeited "for certane crymes of tresson and lese majestie," which was rescinded however by the Parliament, 25th July 1578. But previous to this he was discharged from the ministry by the Assembly 1576, for teaching "that no soul entereth Heaven until the latter judgment." (Booke of the Kirk, Keith, Row, Calderwood, and Laing's History, Wodrow's M.S. Biog. ll. Acts Parl. 3. Chalmers' Caled. 2.)

1569.—David Hume, trans. fr. Foulden, entered at Beltyn; he signed the Articles drawn by the Synod and presented by the Superintendent to the Assembly in 1572. In 1574, Colbranispeth and Aldcammos were also under his care, with a stipend of jc. lxxxvj. li. xiijs. iiijd., of which he paid xx. li. to a reader. He was a member of the Assemblies 1573, 1576. In that of 24th April 1578, the min. of Perth complained against Adamson, the Visitor, that he had, without his advice and consent, collated Hume to a benefice; continued in 1580, and removed to Auldcamus same year.—

(Reg. Min. and Assig., Booke of the Kirk, Calderwood's M.S. Hist., Wodrow Miscell., and Biog. 2, Melville's Autob. 1580.) Thomas Hepburn, above mentioned, returned; he died 7th June 1585. His Frie geir, d.d., amounted to viijc. lxxx. li. He married Margaret Sinclair (who subsequently marr. Mr Walt. Hay, Provost of Bathans), and had a son Thomas, afterwards in the benefice, and two daughters, Margaret and Geiana. He also left a brother Robert.—(Reg. Assig., Test., and Deeds xxxi., Inq., Ret. Haddingt. 10.)

1585.—James Lambe, Reader of Tynningham 1576, and at North Berwick 1578; trans. to Auldcamus before 1586.—(Reg. Assig.)

1586.—Thomas Hepburne, trans. fr. Auldcamus, deposed by the Synod, 2nd May 1599, for not submitting to their authority in a case of stipend between him and Mr John Lauder, min. of Cockburnspath. Restored in 1601, and was a member of the Assembly 1610. In 1627, there were in the par. about four hundred communicants. He died before 9th April 1629, leaving a son Mr Alexander, afterwards a Regent in the Univ. of Edinburgh, and a daugh. Jeanna, to whom her brother was served nearest agnate.—(Reg. Assig., Sec. Sigill., and Presb., Excheq. Buik, Booke of the Kirk, Syn. Extract, Edin., Presb. and Test. Reg., Stat. Reports 1627, Calderwood's Hist., Inq. Ret. de Tut. 448, Ind. Reg. of Testaments.)

1629.—John Patersone, trans. fr. Denny, one of his Majesty's Chaplains and Elimeoziners in Scotland, pres. by Charles I. 21st April; died before 22nd July 1642, having the crop for that year. His vtencils and librarie were estimat at jc. lxxvj. li. xiijs. iiijd, Inventar and debts iiij, m, viijc, xxxii, li, xiijs. iiijd.—(Reg. Soc. Sigill., and Pres., Innerwick Sess., and Test. Reg.)

1642.—Thomas Hepburn, A.M. trans. fr. Lennal, when there were competing presentations, though by whom is not stated, adm. 22nd Sept; died 9th May 1671, aged about 55. His librarie was estimat at viijc. merks, Frie geir dd. jm. viij. xxxviij. li. He married Margaret Paterson, who survived him, and had a son Patrick, and eight daugh., Barbara, Margaret, Kathrine, Ann, Isobell, Elizabeth, Mary, and Elizabeth.—(Sess., Presb., Syn., Innerw., Sess. Test., and

Edin. Reg. (Bap.), Inq. Ret. Berw. 373, Hadding. 311, Gen. 5529, 5526.)

1672.—John Gibson passed trials before the Presb. of Haddington, and got a testimonial, 19th Oct. 1671, for lessons, and secondary trials before the Presb., and got another 23rd April 1672, for ordination, and was adm. 21st May thereafter; deposed in 1690 for drunkenness. He married Margaret Andersone, and had John, Margaret, Anna, and David.—(Presb. and Sess. Reg., M.S. Acc. of Min. 1689.)

1695.—John Currie, a native of Ochiltree, called in Nov. 1694, and ord. 14th March following; called in Elgin in 1697, but not translated, got a new church built in 1701, and was trans. to Haddington 23rd March 1704. (Presb. and Sess. Reg., Acts of Ass.)

1706.—Harry Robertson, A.M., studied and obtained his degree at the Univ. of Edinburgh 7th April 1675, called 13th Dec. 1705, and ordained 25th April thereafter; demitted 5th., which was accepted 20th October 1731, and died in Edinburgh 30th Nov. 1732, aged about 76, in 27th min.—(Edin. Grad. Presb. Test., and Edin. Reg. Bur.)

1733.—John Lundie, eldest son of Mr Arch. L., min. of Salton, licen. by the Presb. of Haddington 18th April 1732, pres. by Lord Alexander Hay of Lawfield in Feb., and also in March, and ordained 19th July 1733; died 10th May 1786, in his 82nd year, and 53 min. He married 16th Feb. 1741, Helen Lundie, who died 17th Dec. 1744, and had Archibald and Isabel; 2ndly, 7th Nov. 1751, Helen, daughter of John Hepburn of Humble; she died 15th Jan 1777.—(Presb., Sess., and Syn., Reg., &c.)

1787.—John Cochran, licen. by the Presb. of Linlithgow 18th Dec. 1780, pres. by Robert Hay, Esq., of Lawfield, with consent of his curators in Oct. 1786, and ord. 22nd March following; died 22nd May 1796, in 46th age and 10th min. He married 19th August 1789, Catherine Miller, who died 15th March 1828, and had two sons, Alexander and Thomas. Publication-Account of the Parish (Sinclair's St. Acc. vii.)—X. (Presb. Reg., Tombst. &c.)

1797.—Robert Moore, A.M., studied and obtained his degree at the Univ. of Glasgow in 1781, licen. by the Presb. of Hamilton 26th Aug. 1788, pres. by Robert Hunter, Esq.,

of Thurston, in Nov. 1796, and ordained 6th April thereafter; died 22nd Aug. 1846, in his 87th year and 50th min. He married 8th June 1797, Janet, daugh. of Mr John Boreland of Woodside; she died 29th Nov. 1803, and had a daughter Margaret: 2ndly, 23rd Aug. 1805, Margaret, daughter of the Rev. Daniel McQueen, Prestonkirk; she died 7th Jan. 1810, and had Mary, John Wardrop, and Daniel McQueen: 3rdly, 31st Dec. 1812, Agnes Sleigh, relict of Mr Alex. Miller, Thorntonlooh; she died 4th March, 1843.—(Presb. Reg., Tombst., &c.)

Leaving the conveyances at Stottencleugh, the party proceeded in fairly fine weather on foot, under the guidance of Mr Wilson of Chapelhill, and of Mr and Miss Hood of Linnhead, to Aikengall, and passing below the farm house proceeded up Shippeth Glen, the most extensive of all the glens opening out from here into the hills. Some kept the top of the southerly ridge that slopes into the hollow scooped out by the Shippeth Burn, while others, more adventurous, made their way up the course of the burn, no easy matter along a narrow and deep rock fissure, the means of progress being by supporting yourself with hands and feet on each wall, resting feet on projecting bits of conglomerate, and grasping tangle or brushwood the while.

Botanists were busy both above and below; among specimens collected were secured *Sirix gigas*, *Clavaria aurea*, *Vicia sylvatica* or kidney vetch, the bloom of this being still abundant and beautiful; various ferns, such as the spleenwort, the oak fern, and the sweet-smelling *Lastrea oreopteris*.

More than half way up the length of the glen is a crossing-place. Here a short halt was called; a very few thereafter continued their clamber to the apex of the fissure, the rest ascended to *terra firma* above, joining the others from whom they had parted at foot of the glen, and with them crossed the moor to the edge of the "Burnup" Glen so as to view the out-crops there of the Porphyritic Dyke, called "Fairy Castles," and then follow the glen down to Stottencleugh.

For the fullest possible description of what may be sought for and seen in this wild and beautiful hill region, members would do well to refer to the report of the Cockburnspath

meeting of 1885, where, from page 77, is an elaborate account by the late Dr Hardy of the "Aikengall Ravines," bringing out the geological as well as the botanical features thereof, with which all at to-day's meeting were much impressed.

On return to Stottencleugh, the party were most hospitably "refreshed" by a light luncheon, which Mrs Wilson had most thoughtfully sent up from Chapelhill. They were here met by the President, who had walked across the hills from Dunbar.

Hitherto the weather had been forbearingly fair, but soon after return to Stottencleugh the clouds could contain themselves no longer, and rain began to fall, increasing in quantity and coolness, for a stiff easterly breeze set in as evening approached. The party were not sorry to leave their carriages on the road to Cockburnspath and take advantage of the shelter of the thickly wooded "Dunglass Dean," through which, by Sir Basil Hall's kind permission, they filed to the inn at Cockburnspath, staying a short while to view the ruined remains of the ancient church near the Mansion House.

During the Club dinner in the inn, Col. Milne Home read extracts from an interesting letter he had received the day before from Mr G. G. Butler, the Editing Secretary, written at Glacier, Selkirk Range, British Columbia, on 9th Sept., dwelling chiefly on the enormous "Ice Area" of bypast ages in the regions through which his route had been from the mouth of the St. Lawrence, and the tremendous power of the Ice Motor, as shown by its tracks.

Glacier House,
Glacier,
(Selkirk Range),
September 9th 1900.

MY DEAR COLONEL MILNE HOME,

I have had the pleasure of meeting Mr and Miss Fisher at Vancouver, and very pleasant it was to be able to chat about Berwickshire and Tweedside with them, at so great a distance from home. I saw them on my way through, just after crossing the continent by the Canadian Pacific Railway, and before starting northward for a steamboat journey of 1000 miles up the Pacific coast, from Vancouver

to Skagway, in Alaska. I have now returned from a short, but very interesting, sojourn in Alaska (American) and Yukon territory (British); and after many days of steamboat and railway travelling am now settled down here at 4500 feet above sea-level in the Selkirk range, for a few days "rest," which I hope to devote to mountain climbing and to such observation of nature as is becoming in a Berwickshire Naturalist. I met the Governor General, Lord Minto, here to-day, and we were able to compare notes, not only about Tweedside, but also about the Yukon goldfields, from which he has just returned on an official tour. He went off with his family and A.D.C.'s in a special train for the Kootenay District this afternoon, on his way back to Ottawa.

As a geologist of the amateur species I have been greatly impressed by my journeyings hitherto. The "Glacial Epoch" is a thing one takes for granted, and one knows it as a geological period: but the glacial area is what is here exhibited. On the journey up the St. Lawrence, from Cape Gaspé to Quebec, I could not help seeing the immense area of ice-work shown by both banks when I could see them sufficiently clearly from the steamer's deck: that is a length of 400 miles of coast. Then between Toronto and Lake Huron, and again, after crossing Lake Superior, from Fort William for 150 miles westwards towards Winnipeg, the railway passed through a rocky country that must at one time have been pressed down by millions of tons of slow-moving superincumbent ice: roches montonnées, or (perhaps better) "whale-backs," appeared everywhere, raising their smooth round humps above the surface of vegetable mould. Lastly, along the 1000 miles of coast from Vancouver northwards, the rocky shores and rocky islands equally bore traces of the same mammoth ice-pressure: and the sides of the narrower fiords further north were smoothed to a great height above sea-level. Indeed, when I had left the fiords 40 miles behind me, and had reached Lake Bennett, which is crossed by the parallel of 60° North Latitude, I found the ice-evidence more conspicuous than ever. Lake Bennett runs north and south for a distance of 20 miles between high rocky mountains, and the slopes of these were glacially smoothed and rounded to the height of quite 1000 feet above the lake, leading one to imagine that the lake had been at one time a channel for an onward flow of ice 1000 feet or more in depth. When this glacial period was, or how it was occasioned, the amateur ventureth not to suggest, but he remains profoundly impressed by the enormous area and power of the glacial action.

Then, geologically, the gold mining was interesting. I regret that I have been unable to bring home any large specimens of native gold. But I was a spectator of the finding of a dozen or more nuggets varying in size from that of a pea to that of a pigeon's egg, which were picked up in a few minutes from their natural position on the bed rock of an alluvial deposit, in McKee creek near Atlin Lake. The miners diverted the water of the stream a short way above the

place where they had been shovelling away the sand and gravel, and the bed rock was thus exposed high and dry, showing sparkling yellow lumps of gold wedged in here and there in cracks, or lying helpless on the face of the rock, and resembling, in a curious fashion, small Chinese josses, as they sat in imperturbable indifference, after a retirement of so many thousands of years. The great specific gravity of gold, as compared with rock, makes its hunting and capture a matter of comparative ease; being nearly 8 times as heavy as the granite of the stream's detritus it cannot but sink, till further sinking is stopped by the solid rock; and the deluge of washing that the river gravel receives never washes away the gold, and merely leaves it as the lowest stratum when all the upper strata are carried off by the rush of water. This is, I believe, a question of dynamics rather than of geology.

The question of the Canadian and British Columbian trees is, I confess, a puzzling one to me. Every person I have so far consulted has a nomenclature of his own, and no two agree completely, and most of them differ absolutely. There are Washington pines, Douglas pines, red pines, black pines, spruces, hemlocks, cedars, and Jack-firs; but I cannot recognize, with certainty, a single one of these. The vast number of burnt tree-trunks gives a somewhat melancholy aspect to the scenery. I am told there was a great fire over much of British Columbia 60 years ago, and these gaunt grey skeletons date from that disaster.

I hope that you and your family circle are all well: and with kindest regards to you and them, and to any Berwickshire Naturalists you may shortly meet,

I am,

Yours sincerely,

GEORGE G. BUTLER.

Colonel Milne Home also read a letter from the venerable naturalist, Dr Charles Stuart, expressing regret at his inability to attend to-day's meeting. While sharing his regret, members present could not fail to consider it was best, owing to the inclement weather that had set in, that he had not been with them. At the 1885 meeting, where the doctor was present with 15 other members, he "furnished an outline," as stated on p. 77 of the Report, of what he remarked on two former visits, and an announcement was made that it would appear among the papers of the year. But as it did not appear there, Colonel Milne Home undertook to communicate with the doctor in the hope of his being still able to furnish it, and thereby add to the Club's information regarding the glens of Aikengall. (See p. 269.)

APPENDIX.

Note on an alleged Embedded Toad from a quarry at Coldstream.—By Commander F. M. Norman, R.N.

Dr D. Robertson Dobie, late of Coldstream—before his departure from that town in the summer of 1900—called my attention to a live toad which, it was alleged, had recently been discovered embedded in the sandstone of a working quarry close to his house. I lost no time in repairing thither, but found, as I expected, and as unfortunately seems to be the rule in kindred cases, that the block in which the animal was declared to have been entirely isolated and enclosed had been so broken up that for want of reliable data I was unable to make any examination, or form any conclusion that can be considered final or satisfactory; because the mere statements of workmen unskilled in specific observation cannot be accepted as conclusive, however honestly made or implicitly believed in by themselves.

During my Presidency of the Club in 1884, I treated the whole subject of "Embedded Reptiles" somewhat at length in a paper which appeared in our Proceedings of that year, to which I beg to refer members who may like to consult it.

Suffice it now to emphasize the fact that the chief interest in a living frog or toad found apparently enclosed in a block of ancient stone, lies in the idea, or possibility, of its being coëval with that stone—an idea which must be at once dismissed as a *prima facie* absurdity, for reasons which I have detailed in my paper. Although, however, a reptile cannot be of the same age as his chamber, his presence awakens interesting considerations, as batrachians have been proved to be able to sustain life for many years in close confinement without means of access to the outer world.

Dr Dobie, who is much interested in, and has taken a great deal of trouble about the affair, produced his toad for inspection, which proved to be an ordinary, fairly well nourished, nearly full grown specimen; as well as a fragment of the hiding-place which contained him, a piece of flattened sandstone 6 or 8 inches square, which to all appearance was the floor of a water-worn recess or cavity, of the sort which are common in Carboniferous strata.

If I were asked how the toad got there, I should say that as a very young and small creature, not long emerged from the tadpole stage, he might have fallen down from the surface, crept into the cavity, and have been nourished by dripping water containing minute insects or animalculæ; or to take a more prosaic view, I might suppose him to have quite recently dropped down full-grown, and to have simply utilised the recess for a few days lodging; but, as all the surrounding features were obliterated, I cannot venture beyond conjecture.

Of course our interest would be greatly increased if we were in a position to determine, beyond reasonable doubt, that the aperture by which the reptile originally entered, at whatever age or size, had since been filled up by infiltration and incrustation, because then we could fix for him a very respectable age, though, as I said, the notion of his having existed in his abode since the Carboniferous era, or even of his having "disported in the same limpid stream in which Adam bathed his sturdy limbs" (to use the fanciful speculation of a former toad discoverer at Bathgate) is untenable; still we might allow the possibility of the animal's having lain where he was found in a torpid state for many years.

* * * * *

Since the preceding note was sent to the printer an interesting example appeared in the *Graphic* of 20th April 1901—"A Curious Find: A Flint Boulder with a Mummified Toad inside it"—which attracted considerable attention. The flint, an ordinary flint from the Lewes Chalk, is apparently about as big as one's fist, and has a cavity in its centre, no uncommon occurrence, which contains the dried-up remains of a toad.

The engraving shows clearly that a hole existed at one end of the flint; therefore in this case there is nothing exceptional in kind, though it is a very interesting one in degree.

F. M. NORMAN,

July 1901.

BERWICK.

THE ANNUAL MEETING for 1900, originally announced for October 11th, but postponed owing to its being the polling day for the Berwickshire Election, was held, according to recent custom, in the Museum, at Berwick-on-Tweed, on Thursday, 20th December, at 11-30 a.m.

The following members were present:—Mr A. H. Evans, President; Mr D. Herriot, Mr Somervail, Mr William Weatherhead, Mr Stephenson, jr., Mr Hughes of Middleton Hall, Mr Giles, Mr Boyd of Faldonside, Mr Watson, Mr Short, Mr T. Darling, Mr G. Bolam (Hon. Treasurer), Capt. Forbes, R.N., Captain Norman, R.N., Mr G. G. Butler (Editing Secretary), and Colonel Milne Home (Organizing Secretary.)

Apologies for absence were intimated from Sir George B. Douglas, Bart., Dr Stuart (Chirnside), Rev. Dr Paul, Mr Campbell-Swinton (Kimmerghame), Mr Campbell-Renton (Mordington), Mr Stirling Cookson, and Mr Ferguson (Duns.)

REPORTS OF MEETINGS.

The Reports of the Year's Meetings were laid on the table by the Editing Secretary, and taken as read, as they would appear in the printed Transactions.

FINANCIAL STATEMENT.

The Hon. Treasurer made his annual financial statement, which was considered satisfactory, the accounts having been duly audited.

PRESIDENT'S ADDRESS.

The President delivered his Address, which dwelt chiefly on the migration of birds. At its close, he nominated as his successor for the year 1901 Sir George Brisbane Douglas, Bart., of Springwood Park, M.A. Cantab.

ORGANIZING SECRETARYSHIP.

The office having been accepted by Colonel Milne Home for the year 1901, he was, on the motion of Captain Norman, seconded by the President, re-elected thereto.

HARDY MEMORIAL.

Colonel Milne Home, as convenor of the "Hardy Memorial" Committee, reported that the Memorial Window approved of by the Club had been placed in Coldingham Church, and was formally unveiled on the 26th June, at the close of an impressive dedicatory service conducted by the Rev. David Paul, LL.D., and the Rev. H. M. Lamont, B.D., (minister of Coldingham Parish). The Committee was thanked and discharged.

BRITISH ASSOCIATION.

Mr G. P. Hughes read and handed in his report as the Club's Delegate to the meeting of the British Association held at Bradford in October.

LIVE TOAD AT COLDSTREAM.

A short note was read by Captain Norman on a Live Toad discovered in a quarry near Coldstream. It was ordered to be printed in the Transactions.

LITERARY MATTER.

Colonel Milne Home, pursuant to notice in the circular calling the meeting, drew attention to the inadequate provision for storing literary matter, and other things sent from time to time to the Club, and moved "That this meeting appoint a Committee to investigate this subject, and report to an early meeting any recommendations they may have to offer." The motion was seconded by Mr Watson, who suggested that the Committee be further instructed to arrange, if possible, for a general catalogue to be made of all the books and papers presented to the Club, and for Indices of the Transactions to be compiled to the end of the year 1900. In the course of discussion, the President and Captain Norman took occasion, amid general applause, to pay a high tribute to the Hon. Treasurer for the pains

he had taken and ability he had shown in bringing out the last part of the Club's Proceedings. The motion, with the suggested addendum, was carried, and the following were appointed members of Committee, viz.:—The President, the ex-President, Captain Norman, Mr T. Darling, Mr Watson, and the three Officials, the Organizing Secretary to be Convenor.

PLACES OF MEETINGS FOR 1901.

The dates and places of meetings for 1901 were discussed, but remitted for final adjustment to Sir G. Douglas, the new President, and the Organizing Secretary.

NEW MEMBERS.

The following were elected members of the Club, having been duly nominated in the course of the year:—

Lawrence William Adamson, LL.D., Eglington Hall, Alnwick.

Robert Brown, Todlaw, Duns.

John E. Carr, Scremerston, Northumberland.

James Hewat Craw, West Mains of Foulden, Berwick.

Alexander Darling, Governor's House, Berwick.

A. H. Leather Culley, Fowberry Tower, Belford.

William Milliken, Swinhoe, Chathill.

James Mitchell, 220 Darnley Street, Pollokshields, Glasgow.

Charles E. Moore, Beaconsfield Terrace, Alnwick.

Thomas Paulin, Albion Brewery, Mile End, London.

William J. Sanderson, J.P., Eastfield, Acklington.

Andrew Smith, Whitcheater, Duns.

Andrew Thompson, F.S.A. (Scot.), School House, Glendinning Terrace, Galashiels.

This concluded the business.

The members present then proceeded to the Anchorage, as usual, in response to Mrs Barwell Carter's invitation. It was a matter of great regret to them that her condition of health prevented her personally receiving them, but they were kindly welcomed by Mrs Henderson, and inscribed their names in Mrs Carter's book, kept for the purpose.

The Club subsequently dined together at the Avenue Hotel.

*Notes on some old Earlstoun Localities and Traditions,
with Personal Reminiscences of the far-famed "Broom
of the Cowdenknowes."* By MRS WOOD, Galashiels.

In an address delivered to the members of the Berwickshire Naturalists' Club in May 1899, there is mentioned a tradition, at one time quite current in Earlstoun, that the knowe called the Hawk Kaim derived its name from the falconry of the Earls of Dunbar having been situated there.

The Earls of Dunbar were the superiors of the lands of Earlstoun from the 12th century till 1435, but a few vague and contradictory traditions and some local names, such as "The Hunt Pools," "The Doocote Knowe," "The Coach Hole," "The Pleasaunce," and "The Ha' Kaim," alone remain to suggest that these Earls or some other great family once possessed a tower or hunting seat somewhere about the east end of Earlstoun.

The name Hunt pools is applied to the green lying on both sides of the Braid Burn, at the Horse Market, and it may have been connected with "The Hunt" of the Earls. The character of the ground in former years used to be wet and spongy, fostered perhaps by the overflowing of the burn in times of spate. On the north side of the stream, however, there were always deep, boggy pools, which have only been filled up in recent years by the rubbish of the village being shot there.

Several years ago, when a well was dug at the Green, the upper surface to the depth of three feet was found to consist of ordinary soil; below that it was composed of black, decayed vegetable matter, and at the depth of twelve feet, embedded in this deposit, were some of the bones of the red deer.

The Coach Hole, a dark muddy pool of the same burn, and near the Green, is pointed out as the place where the

Earl's coaches were washed, but as such wheeled vehicles were not then in use the tradition must belong to a later date.

"The Doocote Knowe"—composed of very fine sand—was entirely levelled when the Berwickshire railway was made, and although the operations of the workmen were carefully watched by many intelligent spectators, nothing of interest was come upon. The land to the north and south of this knowe has been under cultivation for years, and part of it is now occupied by the gasworks and the Board School; but, with the exception of a stone lintel, which is said to have been dug out of the small field on the north side of the school about 90 years since, and afterwards used in the construction of a house, I have never heard of any traces of buildings having been found there. Nevertheless, the late Mr Currie, sculptor, Darnich, who resided in Earlstoun a number of years, says in a note to Dr J. Murray's "Thomas of Ercildoune" that when the gasworks were built at Earlstoun about 1832, he saw hewn pavement turned up, and large chiselled blocks which had been part of the original walls and foundations of the "Earl's tower."

A somewhat perplexing statement, however, in connection with this appears in Lord Lindsay's "Lives of the Lindsays," to the effect that "In the early part of the 12th century the country about Earlstoun came into the hands of Cospatrick, 1st Earl of Dunbar. Cospatrick's only residence south of the Lammermoors seems to have been at Lauder."

The Pleasaunce is the name of two level fields on the south-east side of the burn, and I have been told that some old fruit trees grew there up to a late date.

The Ha' kaim is a knoll of about 130 yards in length, and stands at its highest part some 60 feet above the level of the burn, which flows through a small meadow at its foot. It is a gravel deposit, formed by the combined action of glacier and iceberg with currents, and called a kaim or combe from its resemblance to a cock's comb. There are many of these kaims in Berwickshire, and this one is distinguished in old documents by the name of "The Halcombe." The transition to Ha' kaim—for this used to be the common pronunciation, *not* Hawk-kaim—is easily

understood, but the idea at any rate of perching a falconry on the top of such a steep inconvenient spot is at least far fetched.

This knowe, I may add, was many years since cut partly away at the crag end to widen the road to Cowdenknowes and Redpath, and the formation of the kaim was therefore well seen.

Children were in the habit of climbing up the steep front to dig for earth nuts (*Conopodium*), which grew in great quantities among the trees with which the kaim was formerly covered.

It is a well-known and well authenticated story of the broom of the Cowdenknowes having at one time been so high that a man on horseback could ride through it without being seen, but it was always spoken of in Earlstoun in connection with a time long past. I remember, however, that when Dr Home, who sprang from a cadet branch of the old stock, possessed the estate of Cowdenknowes, I was taken there by my father on one of his visits to the family, and in the drawing room Miss Home showed me a specimen of the famous broom, the height of which fully bore out the reputation it had acquired. It stood against a corner of the room, and resembled a salmon rod, but being taller than the high ceiling, the top part was bent round at least 2 feet to find a place along the wall. I was very young then, but Miss Home was so anxious to impress upon my mind the truth of the fame of the great height of the broom of the Cowdenknowes, that its appearance remains clear in my memory still.

Some years ago I accompanied Mr Wood and Mr Tait of Gattonside to the East Moors, Earlstoun, to see "The Black Dyke," which could then be distinctly traced on the farm of Yarlside—a name, by the way, which is believed to be derived from the Earls or Yarls, who were the owners of the lands. After a long examination of this ancient way, as we turned to go homewards, we came unexpectedly on a group of trees, whose old, battered, and weather-worn appearance excited our curiosity. and the more so when we discovered that they were broom trees—not bushes, but trees—of considerable size and thickness, with stunted and

somewhat twisted branches. They grew, I think, at the south-eastern end of the East Moors, between Yarlside and Whitfield; and as Bromayde, mentioned in a charter of date 1333, was apparently in that neighbourhood, perhaps these grim looking trees might be the descendants of those which then flourished there, and gave a name to the spot.

There were, in my young days, in Earlstoun many pilferers of the broom, chiefly to sell as walking sticks to natives of the place who had settled in far-away lands. Some of these emigrants, with a passionate love of the old home, had taken away with them both roots and seeds of the broom in the hope of being able to grow them in Canada, the land for which they were bound; but the climate was too severe, and the frosts of a Canadian winter soon caused them to wither and die. As an illustration of this heart-clinging to home and country, I have quoted the verses below, written—with an explanatory note—by the late Mr William Brookie, and published by him in the *Galaahiel* paper, of which he was then editor. The incident referred to in Mr Brookie's note took place, as far as I can ascertain, in the village life of Earlstoun nearly 70 years ago.

“THE BROOM O’ THE COWDENKNOWES.”

“The following lines were suggested to the writer about 14 years ago, upon reading in some periodical a short account of the emigration of an old man named Burnett, from the village of Earlstoun. He was a highly respectable tradesman, but, owing to the misconduct of a wild son, he was driven heart-broken to seek a home in America. So dear to him were the associations of his native land that he was said to have taken with him some of the young broom of the Cowdenknowes, ‘not knowing,’ as Allan Cunningham says, ‘that it would not grow in the land of his adoption.’ This circumstance being told to Sir Walter Scott, affected him so much that his eyes filled with tears.”

"Bring me some mould from Leader's banks,
I'll plant those 'living coves,
And rear in some wild of America
The broom of the Cowdenknowes;
O the broom, the bonny, bonny broom
O' the Cowdenknowes so fair,
Fareweel to thee, and Leader's streams,
I'll never see thee mair.

Adieu, my native vale, adieu,
Old Rhymer's tower and tree;
But, wae's my heart, the Eildon hills
My dim eyes cannot see.
Alace! my head is hoary now,
And age my back it bows,
Why force me from my father's grave,
And the broom o' the Cowdenknowes.

O! I could lay me down to die,
Were my last hour so near,
Rather than thus be torn away
From all I hold so dear.
O! the broom, the bonny, bonny broom
O' the Cowdenknowes so fair,
Fareweel—a deep heart wrung fareweel—
I'll never see thee mair."

In the address to which reference has already been made in the beginning of this paper, there is given an Earlstoun tradition of the mysterious disappearance of Thomas the Rhymer, the writer of it concluding with the remark, "It is believed that it (viz. the tradition) has never before been printed." I trust, however, that I may be excused for saying that this idea is incorrect, as the story appeared in Dr J. Murray's "Romance and Prophecies of Thomas of Erildoune," published in 1872, and is to be found there under the heading of "Additional Notes to the Introduction," along with other notes on the same subject contributed by my husband and myself.

Homing Instincts of the Gull. By MRS Wood,
Galashiels.

THE following remarkable instance of the "homing" instinct in a gull, is, I think, not unworthy of preservation in the pages of the Club's Proceedings.

About twelve years ago a sea gull—*Larus canus*—was sent from the Cove, Cockburnspath, to take up its abode in the manse garden at Coldingham. As it was quite a young bird, clothed only with downy grey feathers, a small wooden house was made for its protection, but of this shelter it always refused to avail itself. Its wings were clipped, and the bird, as time went by, became quite used to its solitary life. It ate its daily meal with relish, grabbed all the worms and slugs it could find, treated itself occasionally to the tender heart of a cauliflower, or to a young cabbage, and went its rounds with the stolid indifference of an old captive. One day, however, in September 1897, the gull disappeared, and though careful search was made, to the regret of its owners it was nowhere to be found, nor was the smallest hope for a moment entertained of the probable return of their favourite. Nevertheless, to the astonishment of everyone, the bird suddenly came back in July 1898, after an absence of fully 10 months. It looked much as when it went away, only not so clean and white, and at once took up all its former habits; poking into its old holes, using its old runs, and apparently quite at home in the manse garden. Three or four gulls, which it was thought had accompanied it thus far, remained hovering over the burn near the manse, but, tiring of waiting for their companion, left in a few days, and were seen no more.

I may add that the gull in this year of 1900 is still inhabiting its old quarters.

Notes on a Collection of Lichens by the late Mr J. Hardy.

Communicated to the Club, at Mr A. H. Evans' request,
by REV. H. P. READER, Hawksyard Priory, Staffordshire.

THE gift, generously made to me by the Berwickshire Naturalists' Field Club, of a collection of lichens found by the late Mr J. Hardy, was accompanied by a request that I should communicate to the Club a paper thereon. Accordingly I have drawn up the following notes, after having carefully examined the specimens received.

The plants are mostly well "collected"—no easy thing to do in the case of saxicolous lichens. Mr Hardy, however, seems to have been an adept at the use of hammer and chisel, even where the material to be dealt with was granite! This, and the fair preservation of most of the specimens, makes one perhaps regret the more that so many of them are unlocalized and undated. Where dates and localities are given, I have usually thought it advisable to cut out the note and fasten it on with the mounted specimen, seldom feeling sure of interpreting rightly Mr Hardy's somewhat difficult handwriting and peculiar forms of abbreviation. Were I personally acquainted with the district in which he botanized, no doubt these difficulties would be much reduced.

Mr Hardy seems to have flourished in the palmy days of British lichenology; amongst his personal friends or correspondents being the names of Dr Lindsay, the Rev. Hugh Macmillan, Mr W. Mudd, Mr J. G. Baker, and of others, who studied these plants with an ardour and interest which seems sadly to have flagged amongst British botanists of late years. Such of his specimens as are vouched for by any of the above-named authorities will, of course, be correctly named. Where he himself is responsible for names, I have submitted the specimens to further examination, since it seems pretty clear to me that Mr Hardy was often content to name these plants from inspection, and without reference to details only to be perceived by the aid of the microscope and yet of the utmost importance, as for instance the spores. With these few remarks as preface, I proceed to enumerate the lichens:—

- Collema cretaceum* = *Leptogium cretaceum*, Sm.
 ——— *tremelloides* = *Lept. tremelloides*, (L.)
Leptogium tenuissimum, Dicks. "Yarmouth, Dickson,
 ex herb." Turner, no date, but probably collected at
 the beginning of the last century. An interesting link
 with the earliest days of lichen research.
Collema ceranoides, Borr.
 ——— *melœnum*, Ach.
 ——— *nigrescens*, Huds.
 ——— *microphyllum*, Ach.
Trachylia tympanella, Fr.
Calicium curtum, Barr.
Sphærophoron fragile, Pers.
Bæomyces icmadophilus, Ehrh.
Cladonia squamosa, Hffm.
 ——— ——— var. *microphylla*.
 ——— ——— var. *decorticata*.
 ——— *pyxidata* var. *fimbriata*, Hffm.
 ——— *gracilis*, Hffm.
 ——— *cervicornis*, Schær.
Alectoria implexa, Nyl.
Ramalina pollinaria, Ach.
 ——— "polymorpha." There are several specimens so
 named, all of which I refer to *R. cuspidata*, Nyl.
Cetraria aculeata, Fr.
Platysma glaucum var. *fallax*, Web.
Peltigera horizontalis, (L.)
Parmelia Mougeotii, Schær.
 ——— *scortea*, Ach.
 ——— *incurva*, Pers.
Physcia astroidea, Lem.
 ——— *adglutinata*, Flk.
 ——— *obscura*, Ehrh.
 ——— *stellaris*, Nyl. This seems to be the true plant, and
 not *P. aipolia*, Nyl, which has generally been confounded
 with it.
Psoroma hypnorum, (Vahl.) A species easily recognised by
 the subcrenulate margin of spores.
Pannaria nigra, (L.)
Squamaria cœsia = *Physcia cœsia*, Nyl.

Lecanora rupestris, Scop.

—— *aurantiaca*, Lightf.

—— *pyracea*, Ach.

—— *ferruginea*, Huds.

—— *murorum* var. *lobulatum*, Smrf.

—— *parella* var. *Turneri*, Sm.

—— *calcarea*, (L.)

—— ——— var. *contorta*, Hffm.

—— *angulosa*, Ach.

—— *tuberculosa* (fid. Mudd).

—— *luteoalba*, Ach.

—— *pinastri*, Schær.

—— *ventosa*, (L.)

—— *hæmatomma*, Ehrh.

Pertusaria communis, DC.

—— “*fallax*.” Thecæ 1-2 spored indicate that this is *P. communis*.

Pertusaria “*syncarpa*” is *P. velata*, Turn.

Thalotrema lepadinum, Ach.

Urceolaria scruposa, (L.) To this is appended a note, not in Mr Hardy’s writing, questioning the correctness of the name. The spores, however, show it to be *U. scruposa*.

Lecidea uliginosa, Schrad.

—— *lapicida*, Fr.

—— *minuta*, Schær.

—— *fusco-atra*, Ach.

—— *rivulosa*, Ach.

—— *silacea*, Ach.

—— *albocœrulescens*, Wulf.

—— *lenticularis*, Ach.

—— *grossa*, Pers.

—— *canescens*, Dicks. In fructification.

—— *geographica*, (L.)

—— *sphæroides*, Dicks.

—— *rubella*, Ehrh.

—— *rosella*, Pers.

—— *cupularis*, Ehrh.

—— *exanthematica*, Sm.

—— *vermifera*, Nyl.

—— *petræa*, Wulf.

Lecidea concentrica, Dar.

——— *calcivora*, Ehrh. Perhaps the most unplantlike of plants, resembling a piece of stone punctured by pin points.

——— *parmeliarum*, Smrf. "*Abrothallus Smithii*."

Opegrapha herpetica, Ach.

——— *vulgata*, Ach.

——— *varia*, Pers.

——— — *var. pulicaris*. Lightf.

——— *lyncea*, Sm.

——— *saxicola*, Ach.

Graphis serpentina, Ach.

——— *divaricata*, Leight.

——— *sophistica*, Nyl.

Stigmatidium crassum, Dub.

——— *Hutchinsiae*, Leight.

Arthonia vinosa, Leight.

——— *epipasta*, Ach.

——— *astroidea*, Ach.

——— "*punctella*." Numerous specimens occur thus named by Mr Hardy, most of which are spermogoniferous forms, without apothecia, and none can be referred to *A. punctella*, Nyl.

Verrucaria nigrescens, Pers.

——— *mauroides*, Schær.

——— *maura*, Whlnb.

——— *lævata*, Ach. One of the few lichens that live under water, frequently on pebbles in running streams.

——— *epidermidis var. cinereo-pruinosa*, Schær.

——— *immersa*. Somewhat resembles *Lecidea calcivora*, but with 1-septate spores.

——— *biformis*, Bower.

——— *punctiformis*, Ach.

——— *chlorotica*, Ach.

——— *gemma*, Ach.

——— *umbrina*, Whlnb.

——— "*microstoma*," is *hymenogonia*, Nyl.

——— *plumbea*, Ach.

——— *erratica*, Mass. "*Microthelia pygmaea*."

——— "*ventosicola*." Merely black spermogones of

Lecanora ventosa.

Report to the President and Members of the Berwickshire Naturalists' Club of the British Association and Meetings of Delegates at their Yearly Congress, from the 5th to the 19th September 1900. By G. P. HUGHES, F.R.G.S., Middleton Hall.

MR PRESIDENT AND GENTLEMEN,

In fulfilment of the trust reposed in me by the President and Members of the Berwickshire Naturalists' Club at their Annual General Meeting in October 1899, I submit my report of the Meeting of Delegates from Corresponding Scientific Societies of the United Kingdom to the Congress of the British Association at Bradford, in September last. Just 27 years have intervened between the previous meeting of the Society at Bradford in 1873 and that of this year. In the course of that time the population and area of the city have more than doubled, partly by the absorption of suburban villages, some of which have been almost entirely remodelled. In order to meet the demands of sanitation and convenience of a large widespread population, a thoroughly new and enlarged system of sewage disposal, water supply, and electric car traffic has been completed, the latter being equal to any I have seen in this country, or America. Benefiting by the natural surface water supply from the elevated moors and radiating valleys of Upper Wharfedale, the manufacturers of Bradford, Shipley, and Keighley, which adjoin each other, have been able, economically, to enlarge the manufacture of woollen fabrics, and compete with Leeds, whose water supply is less abundant, with ease and advantage.

At Saltaire, within electric car distance of Bradford, a large and admirably conducted town, manufactories of soft goods, mohair, alpaca, and other foreign wools, etc., have sprung up in the course of the last half-century, and are the property of the 3rd generation of the Salt family, by whom it was originally founded. In the immediate vicinity of Bradford, the iron industry, in the form of gun and iron bridge factories, has been greatly developed at Low Moor, where prosperity reigns at this moment and seems ensured for years to come.

Clay is not abundant in Upper Wharfedale, but by artificial means the boulder clay, containing much stone and shale, is converted into a substance applicable to the finest purposes. However, the sandstones of the adjoining hills are well nigh inexhaustible, and vary from the hardest grit to the fine stone of which the Town Hall and other public buildings of the city are erected. Much prepared sandstone is trained elsewhere, the calliard, gannister, or millstone grit being well adapted for dock gates, the basements of large

buildings, and engine beds. In this quarrying and dressing of stone many thousands of men are employed, and their skill is often appreciated, where a demand for the material springs up.

The coal supply of the Wharfe Valley is derived from Halifax, Pontefract, and Lancashire, within 50 miles of Bradford. The gas of Lord Masham's Colliery, near Pontefract, is brilliant, approaching even the electric light, and is one of the sources from which London derives its gas light. With a large party I visited these mines, on the invitation of Lord Masham, and we descended one of the pits, and, after a handsome luncheon, were conducted round the coal and coke industries, the machine appliances for which comprised some of the latest patents and most powerful generators of energy.

Twenty-seven years ago I attended the British Association Congress at Bradford, of the year 1873, and remember such eminent members of the Society as the Right Hon. W. E. Forster, M.P., Professors A. and W. C. Williamson, Professor Clark Maxwell, Drs Huggins and Hooker, Ray Lankester, and Professors Phillips and Ball. This year the attendance—though affected by the war in South Africa, and the Paris Exhibition, where a series of international scientific and political meetings are being held through the summer months—was an average one of 1915 members and associates.

Favoured by perfect weather, an important adjunct to the creature pleasure of these meetings, and receiving that cordial hospitality for which Yorkshire is well known, the Congress was generally regarded (by the ladies) a success. Scientifically speaking, originality in the papers or sensational discoveries or explorations was not a feature of the meeting of this year. And yet a large share of usefully important work was gone into.

The President, Sir William Turner, tactfully selected for the subject of his address *The Building up of the Animal and Vegetable Frame by a Development of the Cell*, which is microscopical, and composed of a nucleus and outer wall, within which protoplasm occupies the space between wall and nucleus. The discovery was made by Brown and Schleman with reference to plant life, and by Theodor Schwann in its application to animal structure, in the fourth decade of this century. "This discovery supplied the physiologist and pathologist with the *specific structures*, through the agency of which the functions of organisms are discharged, in health and disease. It exerted an *enormous influence* on the progress of practical medicine." Of the nine sections into which the work of the Congress was divided, I was able to attend the opening addresses of three. The most distinctly heard by the large audience in the Hall of the Church Institute, and the most appreciated, was that of Sir George Robertson, the defender of Chitral, of which he has latterly been Commissioner, and the writer of an interesting work on *An Event in Indian History*, and of the methods by which

the stability and homogeneity of the British Empire have been established and maintained.

Sir George Robertson is eminently typical of our East Indian Commissioners or Governors, and he very appropriately selected for his address, *Imperial Highways and Telegraphy*.

I attended the sections *Statistics, Geography, Geology, and Anthropology*; and had an opportunity of supporting two readers of important papers in the statistical section, by some remarks. On these questions Dr Saunders of the Canadian Experimental Farm directorate, Professor Somerville and Principal Hall of Wye College, also spoke. The latter read a paper on carefully recorded experiments in this country and Germany of the *Sugar Beet*. His observations seemed to indicate that beet sugar could be more successfully made in Germany than in the most suitable parts of England, and that as the trade in sugar now is, beet sugar is not a paying article of commerce in England. In Germany the grower enjoys a bounty. In the Anthropological Section an interesting paper was read on "The objects and process of tattooing among uncivilized races," notably among the Maories, Australian Aborigines, and Congo tribes. It is a practice also among our sailors; and is not uncommon among students in the German Universities, who practice duels with broad swords, with the view of acquiring scars, which are legitimately the honoured attribute of the country's defenders in war. The religious significance of tattooing is not clearly known, but is probably intended to signify that a vow has been taken.

Three evening lectures of great practical value and interest were given to the members of the British Association and the general public, in St. George's Hall. The first of these was by Professor Gotch, I.R.S., on *Animal Electricity*, and in the course of it, by experiments with the living electric fish, and by diagrams, he gave a vivid illustration of the vast concentrating and radiating power of several species of fishes in the tropical waters.

The lecture by Professor Stroud, D.Sc., on *Range Finders*, was perhaps the most engrossing discourse of the Congress. He himself has invented the range finder now in use by our Navy, which is of necessity more complicated than those that have been generally used by our Army in South Africa this year. In operations on land a base of 30 to 100 yards can usually be calculated from, and is free from oscillation of the sea wave.

Professor Silvanus Thompson, F.R.S., gave a popular lecture on the *Generation and Application of the Electric Current*, to working men, on Saturday evening. All these lectures were attended by an audience of upwards of 3500, which was near the capacity of the hall.

Ere I conclude this report I shall state briefly the conclusions arrived at by the Delegates from Corresponding Societies, after a very general discussion, presided over by Professor E. B. Poulton, M.A.,

F.R.S., in which every member seemed to take part. The following conclusions were cordially adopted:—

1.—“That a room shall be provided at the Bradford and other future meetings of this Association, in which delegates may meet, become acquainted with each other, and hold informal discussions, between the meetings of the Conference.”

2.—“Regarding a suggestion that an agenda paper should be sent to the Corresponding Societies some time before the British Association meeting, in order that delegates might come better prepared to the Conference, it was decided that although the circular issued in July is an agenda paper, it would be well to add a clause to it, asking that the Secretary of each Corresponding Society receiving it should bring the subjects for discussion at the Conference before the notice of the delegates of the Society.”

3.—“It was also decided by the Committee for Corresponding Societies, that the circular drawn up some years ago by Dr Kaston, stating the rules respecting the Corresponding Societies and the advantages granted to them, should be reprinted, and sent in March to the Corresponding Societies, and that at the same time a notice should be sent, inviting the Societies to consider what subjects they wish to have discussed at the next Conference of Delegates, and fixing the date by which suggestions must be sent.”

The following Societies have been added to the list of Corresponding Societies:—

- 1.—The Birmingham and Midland Institute Scientific Society.
- 2.—The Eastbourne Natural History Society.
- 3.—The Natural History Society of Northumberland, Newcastle, and Durham.
- 4.—The Hull Scientific Society and Field Naturalists' Club.

I shall merely add that these resolutions were brought about by a letter I wrote to the Chairman of Delegates last year, when at the Dover meeting; and this, being read to the meeting of delegates, was generally supported by those representatives of Corresponding Societies, who I was aware had, like myself, been dissatisfied with the diminishing opportunities for discussion, and the inadequacy of the place for holding their meetings afforded to the delegates, many of whom had travelled long distances, and were protracting their stay at the British Association Congress, in order to fulfil their duties to their several societies, from whom a report was looked for. I believe the conclusions arrived at, between the meeting of Delegates at Bradford and their Committee attached to the working machinery of the British Association, are of a nature to strengthen the representation of the Corresponding Societies by their Delegates, and thus to lend additional importance to the *value of science throughout the Kingdom*.

A Visit to Aikengall Dean in 1884. By DR CHARLES
STUART, Chirnside.

[THE following interesting account of a visit paid in July 1884 to the scene of subsequent explorations of the Club may fairly find a place in this volume to reinforce, not to supersede, the report of the most recent visit. Dr Stuart explains that he wrote it at the time for publication in the Proceedings, but that by an accident it never reached Dr Hardy for insertion. It is still welcome, in its original form, subject to the following additional note. "The only plants," he remarks, "not mentioned in this paper are *Rubus saxatilis*, the stone bramble, taken in fruit by the Club at their last year's meeting (1900), and *Fumaria micrantha*, the smaller fumitory."]

SHEEPATH DEAN IN LAMMERMOOR.

In company with two congenial spirits, a successful excursion to this interesting locality was made on the 15th July 1884. Travelling by the 8 a.m. train to Cockburnspath, we found, through the good offices of Mr Wilson of Chapel Hill, a conveyance in waiting to carry us by Hoprig and Oldhamstocks to Stottencleugh in Lammermoor, distant about six miles. The road is very hilly and rough, and a sure-footed horse desirable, as the bed of a stream constitutes the only road for a certain distance, which must make it in heavy flood a rather difficult place to drive over at all. Leaving our conveyance at Stottencleugh, we ascended the dean of that name behind the house, which is well wooded and steep. The only plant obtained worth mentioning being the gueldres rose (*Viburnum opulus*), which grows wild in most of the Lammermoor deans. Coming out at the head of the ravine, we kept by a wire fence along

some cultivated fields till we reached the heather, and held over the moor in a north-west direction. Among the heather a meadow pipit flew off her nest, which contained four brown eggs, but no egg of the cuckoo. The structure of the nest was a marvel of skill, built among the roots of the purple heather, and so carefully concealed. The petty whin was the only noticeable plant on the moor. The purple heather was in fine flower, and where it grew in mass it was of a glowing red. On attaining the summit, we looked into East Lothian, the monument at the Garleton Hills, North Berwick Law, Thurston Woods; the farms of the Brush and Pathhead, etc., being all in view.

The weather was perfect, and the sun lighted up the landscape, which was very rich and finely wooded. In the Hall's Dean, splendid specimens of *Carex levigata* (smooth-stalked sedge) were obtained on a moist rock face. The *Cistopteris fragilis* (brittle bladder fern) and *Lastrea oreopteris* (mountain fern) being in profusion. Coming down on the road from Innerwick to Aikengall we took to the right, behind the shepherds' houses, and on attaining the summit we came to the lower end of Sheeppath Dean, sometimes named Aikengall. Scrambling down, we followed the burn running through it, as far as we could go, gathering *Vicia sylvatica* (the wood vetch) of a beautiful pale flesh colour. One requires to come to these ravines to see this plant in its full beauty. On the sea braes it has never the same tint. All up this ravine it hangs in masses over the scaurs covered with its delicate flesh pink blossoms. These masses constantly recur, and, with the luxuriance of the ferns, the contrast is remarkable to behold.

The stream is bordered by very steep, rocky banks clothed with greenery, quantities of the *Cistopteris*, with fronds of unusual size, gracefully drooping towards the water. Among the mosses the *Geranium Robertianum*, with its pink blossoms, and the *Lychnis vespertina* and *dioica* and other common plants give colour to the greenery covering the rocks; the oak-fern, with unusually large fronds, being in profusion near the lower waterfalls.

Progress is not easily made here, the banks being very steep, and the bed of the stream our only path. Retracing

our steps, we scrambled to the summit, and, after walking for a short distance, again descended to the stream, which we followed without difficulty to near the head of the dean. On the mossy banks profusion of *Myosotis sylvatica* (wood forget-me-not) blue, white, and pink, were met with on the right hand side of the stream.

Melica nutans (mountain melic grass), which always loves to grow near the spray of the waterfall, was in quantity, with its graceful nodding heads. On the same moist face *Crepis paludosa* (marsh hawkbeard) showed its preference to a moist mountain wood. The pink and white lychnis grew all over the place, with the pink cranesbill; while *Geranium sylvaticum* added its blue to form a contrast. The Gueldres rose, with its globular snowball flower, is plentiful. *Cnicus heterophyllus* and *Carlina vulgaris* occurred in several spots.

If the dean is entered from the south side there is a sort of path made by the hunters to allow the hounds access, down which the betanist can scramble, and it is above this point where the best of the plants are to be found. *Trifolium medium*, with flowers of a glowing red, grows close to the *Melica nutans*, and is a remarkably pretty plant. The *Lonicera periclymenum*, clambering up the trunks of the spruces, or on some decaying stump, diffuses its fragrance in honeyed balm.

On the more sloping banks on the south side of the dean the mountain fern, with its pale green scented fronds, covers a large surface, forming a half shrubby covering, which cannot fail to attract the admiration of every lover of nature. In several places my attention was particularly attracted by peculiar forms of *Aspidium aculeatum* var. *lonchitoides*. They, from the length and narrowness of the fronds, are striking plants for cultivation. Proceeding onwards we arrive at a steep rocky scaur on the left hand of the stream, covered with moss; in the moist crevices a profusion of *Asplenium trichomanes*, the black spleenwort. Nowhere have I ever seen more beautiful forms of this elegant fern. The rock on which it grows is almost too steep to climb, but plenty is within reach, and I sincerely hope that ruthless collectors will be careful of extermination. It is rooted among the moss, and the circles of its fronds

are everywhere. *Rosa canina* and *R. caesia* clothe the banks here with the Gueldres rose, while the stitchworts clamber over the rose-brakes in great luxuriance.

The seclusion and stillness of the dean is remarkable, for if we except the carol of the lark from the uplands, and an occasional note from the blackbird, no sound of bird life is to be heard. In the lower part of the dean the grey sandpiper was flitting about the stones in the stream, and earlier in the season the water-ousel will, no doubt, breed here. Mosses and *Jungermannia* are in fine fruit all over the moist banks. *Sedum villosum*, with its pretty pink flowers, showed through the damp moss, and surrounded by the fragrant mountain fern. We lunched by the edge of the burn, and refreshed after a pleasant walk and scramble. Immediately above where we were sitting, a dyke of brown sandstone intersects the greywacke, allowing only space for the burn to pass. A mountain ash strikes its roots firmly through the crevices of this dyke, on its southern aspect, and the extraordinary manner in which it has fastened itself is worthy of examination.

Small plants of *Asplenium trichomanes* grow on this rock with many other plants. We now clamber up the south bank and gain the moor table-land, taking a south-east direction for the next ravine, which is only partially wooded. The distance across can hardly be a mile, and when the brink of the ravine is reached, if found too steep for descent, by walking higher up, a better place for descending it may be discovered. In going down we get into a soft boggy place among some willows, where we picked some splendid specimens of *Marchantia polymorpha*, covered with its umbrella-shaped fruit. This was one of the most remarkable plants I had met with on this occasion. A patch of it taken carefully up, brought home and placed in damp moss under a bell glass, in a pan of water, would have astonished the uninitiated. Under the willows, on a moist face, it covered a considerable space. In company with it grew stately specimens of *Carex levigata*. The ravine here is very steep, and the bottom covered with loose stones. Torrents of melting snow in winter come down here from the surrounding hills.

Although much rain had fallen for the past week in the Merse, there seems to have been none here. The bed of the ravine was quite dry, except where occasional springs were met with. Two old black cocks were put up in this ravine feeding on the fruit of the Alpine strawberries, which are here abundant. A few grouse were seen on the moors. The meadow pipit, thrush, chaffinch, stonechat, wheatear, and wag-tail were the principal small birds met with, and there was a disappointing want of variety as regards bird life. The physical appearances are undoubtedly the features, which will engage most attention here. The wonderful boulder clay banks, full of water-carried stones, rising in some places to the height of a hundred feet, are very striking. A most remarkable dyke of brown sandstone intersects the lower part of the ravine, in a slanting direction, and no doubt is a continuation of the one we saw in the higher part of the Sheeppath Dean. We came to this conclusion after seeing the first one, and comparing the direction from which we had come. Its definite inclination, both here and at the other dean, led us to this opinion. This dyke is popularly named by the country people "Fairy Castles," and is for itself worth coming all the way from Cockburnspath to see.

The whole region is classical, having been carefully explored by the late Sir James Hall, Dr Hutton, and Prof. Playfair, as regards its geological features. Many cracks or landslips in the sides of the hills—carried away by melting snow, and named "Steels" with the name of hill prefixed, where they occur—are seen on the hill sides. These names are similar to other Border designations as "Laidlaw Steel," etc. The ravine we are traversing brings the wanderer out at Stottencleugh, a rather painful journey in a warm day for the feet, the loose stones being very uncomfortable to walk over. As we walk downwards, the beautiful wild thyme (*Thymus serpyllum*), in many shades of pink, delights the eye, covering as it does, as with a carpet, the gravelly and stony bed of the almost dry ravine. The stately foxglove grew on the banks among the ferns further down, in many shades of rich purple. Under a shady rock the golden saxifrage, beech fern (*Polypodium phegopteris*),

and oak fern (*P. dryopteris*), were all growing in company. On the crumbling micaceous schist, *Fragaria vesca*, in a most minute form, was very pretty, the plants often only bearing a single berry in their centre. On the rock garden I find they adhere to this miniature habit, and are therefore interesting objects there.

Altogether this excursion is a most interesting one, and with good weather I expect the Berwickshire Naturalists' Club to be thoroughly pleased when they go there next summer. After a long walk over the stones, we reached Stottendleugh at about 5 p.m., and made the journey to Cockburnspath Station in time for the six train, which conveyed us to our homes in good time, with our vascula well filled.

To the foregoing account Dr Charles Stuart now (Sept. 1901) desires to add the following list of plants not recorded in the district:—

Geranium sylvaticum, Flora alba.—A beautiful form, unknown at Kew or Royal Botanical Gardens, Edinburgh; near Preston on the Whitadder.

Centaurea nigra.—On the railway banks between Reston and Reston Mains.

Habenaria bifolia, butterfly orchis.—On railway banks between Reston and Reston Mains.

Mimulus rivularis.—On the Eye, near Grants House.

Trollius Europaens.—Edington Woods, and strips on Foulden West Mains.

Malva rotundifolia.—Banks of Whitadder, West Foulden.

Malva moschata, Alba.—Banks of Whitadder, West Foulden (getting scarce). Naturalized near my house, Chirnside.

Linnaea borealis.—Brockholes Wood, Drakemire, near Grants House; abundant, and increasing.

The Changes which take place in Plants in a wild and cultivated state. By DR CHARLES STUART, Chirnsida.

It is a very difficult matter to account for the changes we observe in plants botanically related to each other. So many different points have to be taken into consideration, as regards soil, situation, and exposure, before a permanent form different from the original type is maintained. It may be an improved form that is evolved after a struggle, and is, no doubt, nature's effort without any artificial crossing or hybridizing by human agency at all. I feel convinced, both in field and garden, we have many instances of species evolved naturally. No doubt the botanist recognises these improvements, and selects what in his view possesses the most distinct variation.

In a mass of seedlings naturally produced, there are many weakly, bad constituted individuals, which eventually disappear after a struggle for existence, where they show an unfitness to live or combat the climatic changes that they would be exposed to. Take the Natural Family Cruciferae for instance, as a good example of how variations continually take place in varieties. This I saw for myself, before knowing what is now patent to every one; and the following facts, which seed growers are all aware of, shows the care that is necessary to prevent the crossing of varieties

of the cabbage tribe. Some sprouting broccoli, growing under a netted enclosure, flowered and ripened their seeds well. Some of these seeds were sown, never dreaming of any crossing or hybridizing. The produce, however, opened my eyes. A regiment of plants of a coarse kale constituted the produce, which failed to give the fine succulent growths we were accustomed to gather from the sprouting broccoli. Some coarse cabbage had flowered in the neighbourhood of the sprouting broccoli. Pollen carried by bees or moths had fertilized the blooms, and completely altered the type of the plant. Selection must always be taken of our most robust plants as seed-bearers, and by that means a strain becomes established, which can with great care be maintained.

Many of our wild plants in nature are hybrids. That crossing varieties does not always give seed bearing forms is well known. Indeed, the capriciousness of flowers in this respect is unaccountable. For instance, the flowers of a variety may refuse to respond to the pollen of another of the same family; while the pollen-bearer may reciprocate from the other side. In the *Rhododendron* family, this has often been proved by hybridists. I have experienced the same difficulty. Species and sub-species are nature's work, and their existence it is very difficult to give an account of.

I give an example from personal experience. About ten years ago, when at Killin with the Scottish Alpine Botanical Club, we made our excursion to Lochan Laragan, a wild tarn situated on the watershed between Killin and Glen Lyon, on the old hill road to that region. The precipices all round the loch have a north-east exposure, and very moist, and are covered with alpenes and ferns, *Woodsia Alpina* among the number. Having gathered all I could get, by the course of a very steep mountain torrent which had made a way for the water to get to the loch, I, after a laborious ascent, reached the plateau with the rocks of Meal nan Tarmachan towering above. Several members of the Club ascended these rocky precipices to the summit, without getting much. The minister of Killin, the Inland Revenue Officer, two gentlemen who had got

the President's permission to accompany the party, went with me along the foot of these rocks, with not much success botanically. However, on a wind-swept projection of precipice I observed a tuft of *Veronica saxatilis*, with a rose pink coloured corolla, the base of each corolla having a deep crimson circle. Unfortunately the plant was growing on a point of rock inaccessible to me. One of my companions however, of lighter build, volunteered to climb to the place, and with my Alpine-stock rooted out the tuft, which fell over the rock at my feet. Another tuft a little further off was also obtained, growing on bare rocks of similar character. The colour of the corolla of *Veronica saxatilis* is a blue of a lovely shade; in this new variety it was rose pink, equally beautiful. After growing this plant for ten years, it has kept to its true pink colour in the main. The produce of the seed has also come true—a beautiful rose pink. Within the last year I was rather astonished, at the flowering season, to observe a blue flower of the type show itself. Whether this blue came from a chance seed in the soil, or a reversion to the original *Veronica saxatilis*, I cannot make out. At all events I do not consider there was any crossing here. *Veronica saxatilis* var. sub-sp. *Stuarti* is a true sub-species of *V. saxatilis*, and I shall endeavour to prove it by another example.

While botanizing with the Scottish Alpine Botanical Club at the Spital of Glenshee, on a bye day I was fishing in Glen Loxie, and on a high bank I observed several spikes of a beautiful salmon pink *Digitalis* growing out of a number of flowering spikes of the ordinary type. I had no spud with me, but I cut out these salmon coloured spikes from the clump of the ordinary type, and brought them down to the hotel. The late Professor Dickson was standing at the door when I arrived, and I showed him those salmon coloured spikes. He enquired why I had not brought the roots; and further observed, I am afraid you will lose those beautiful forms, the seed pods being in an immature condition. The spikes were brought home with me in my vasculum; placed in bottles of water, in a sunny window. After about three weeks some of the pods ripened, and the seed was immediately sown in pans,

and hundreds of plants obtained, which were kept in a cold frame till next spring. Planting them out in May, a few showed flower in the autumn, of the same salmon pink colour of flower as the seed-bearer. Not one flower of the ordinary type was seen either that or the next season. I cultivated this *Digitalis* for several years, but from want of care it was lost altogether. Two years ago I was rather astonished to see my friend among "my wilderness of flowers"—self sown, and true to character. Carefully the seed was saved, sown, and numerous plants obtained. Amidst a mass of the ordinary form, only six plants of the salmon coloured break were to be seen. Now, no one but myself saved the seed and sowed it, or planted the seedlings outside, so that I can guarantee that no mistake was made. Here was a reversion to the type, arising from what I consider the seed-bearer having got into a wild condition. The question arises, had the seed-bearer been cultivated in good soil, and taken care of, would not all the seedlings have assumed the salmon colour? I cannot tell this, but I suspect it, from former experience. Here, in consequence of allowing the seed-bearer to run wild, a number of "Rogues" showed themselves. The Glen Loxie pink *Digitalis* was a true instance of the subspecies or sport from the original type, which might have been perpetuated true, had it not been allowed to run wild, sow itself, and finally revert to the original pink type. In my experience, I have not found in a true hybrid this tendency to revert to one or other of the parents as in the *Digitalis* just described, although by careful cultivation I consider the salmon pink colour might have been confirmed.

To take an instance of true stability in a species, I will describe the following example:—About ten years ago, when botanizing in Connemara, west of Ireland, with the Scottish Alpine Club, we visited Roundstone, and on Urrisbeg collected the true Mediterranean heath and the maiden-hair fern. On returning to Cashel Bay, where we remained for a few days, several members drove to Roundhill, near the junction of the Clifden and Roundstone roads, to the station for the *Erica Mackayana*. We had not

been long engaged in gathering specimens, which were in fine state, when I directed attention to a slender form of *Erica*, growing among *E. Mackayana*; but it was not supposed to be anything novel till I showed Mr Robert Lindsay, who was working next me, who thought the plant a distinct novelty, and a most remarkable plant. Digging up plenty of specimens, we returned to Cashel Bay Hotel, where we joined our friends. This new *Erica* was submitted to critical eyes, and a universal opinion expressed that a new form had been discovered. Considering that I had been on the summit of Cashel mountain in the morning, and not with much success, I felt rather elated with my good luck on Roundhill. Although we failed to find *Erica ciliaris* at the station indicated by the late Prof. Balfour, I believe we were never near the real locality, which I am strongly of opinion is near Roundstone. The new *Erica* is a plant of slender growth; tips of the short pale green and yellow; the corolla compressed of purplish pink colour, and the habit of the plant rather prostrate. On returning to town, specimens were submitted to Dr Macfarlane, now Professor of Botany in the University of Philadelphia, a skilled botanist and microscopist, who critically examined the plants, and came to the conclusion—in an exhaustive paper on the subject, read by him at the Botanical Society, Edinburgh—that this *Erica* was no hybrid, but a sub-species of *Erica Mackayana*. It was named then and there by the Botanical Society, *Erica tetralix Mackayana* sub-sp. *Stuarti*, after the finder. After growing and flowering the plant for more than ten years, I have arrived at the conclusion that *Erica Stuarti* is a true species. My friend, Mr Lindsay, is of a similar opinion. He writes me, that “I am by no means pleased that your *Erica*, a real novelty, is relegated to a position as sub-species, as it is much more distinct than many true species.” Mr Lindsay, formerly Curator Royal Botanic Gardens, Edinburgh, has worked more than any man I know in hybridizing species and crossing varieties; and from the behaviour of the plant with me, I consider it to be a species, and a very distinct one.

It is only now that *Erica Stuarti* has come under the general notice of botanical authorities, as specimens were

scarce. Now, however, there is a general wish that the opinion of several experts should be got, and the Rev. Mr. Linton, a well-known authority, has expressed a wish to know more on the subject, and will have a flowering specimen this spring. I hold the opinion that *E. Stuarti* is a true species on the following grounds. (1) It has no family resemblance whatever to *Erica Mackayana*. The habit of the plant is entirely different. The foliage has some slight resemblance, but the corolla is a longish shaped, compressed, purplish pink, with more resemblance to *Erica Mediterranea*, which grows miles away. That *E. Mackayana* is a sub-species I believe, for there is a strong family resemblance; but *E. Stuarti* as a species has no resemblance whatever to either *E. Mackayana* or *E. tetralix*. *Erica ciliaris* has also a strong resemblance to *E. tetralix*, but that plant has distinct botanical distinctions that constitutes it a true species.

The bell heather type is well maintained in all three forms, *E. ciliaris*, *E. tetralix*, and *E. Mackayana*; never in *E. Stuarti*, which I consider to be a true species, and a very distinct one. I have flowered the plant for ten years every season. It has never shown the least tendency to sport or revert into the type of anything but itself. The seed is so minute that up to this time I have failed to raise seedlings; but I do not despair, and I would be glad to know of anyone who has succeeded in doing so.

In the Botanical Natural Family Primulaceæ there are two plants held by many botanists to be almost the same, as far as differences or distinction exist between them. I refer to *Primula scotica* and *Primula farinosa*. Whoever has seen those plants growing in their native habitat could never say they were so like, that botanically there was no difference between them. *Primula scotica*, a gem among primroses, grows in thousands on sandy dunes in Caithness-shire, Sutherlandshire, and often near the sea, or where the sea has at one time been. *Primula farinosa*, another very beautiful member of the same family, prefers a limestone district, like Teesdale in Yorkshire, where it flourishes in the month of June in great beauty.

No one who has seen these two plants growing could ever say they were, to an ordinary observer, even very like; yet there is, according to scientists, very little difference botanically between them. *Primula scotica* is like a small auricula, with abundance of white farina under the foliage, and a flower of pink or purplish colour; in height not above two inches, or less. Sometimes the flowers of *P. scotica* are sessile, reclining on the foliage without fast hold; this is never the case in *P. farinosa*. The flowers of *P. scotica* are never white, but in *P. farinosa* specimens with white flowers were gathered near the Caldron Snout, Cronkley Fell, Teesdale. These two plants are instanced to demonstrate that although nearly related botanically, they both maintain a distinct external appearance at least; and in this respect differ, like the Connemara heath, entirely in outward appearance.

Aquilegia Stuarti (named by the late Professor Balfour) is a cross between *Aquilegia glandulosa* and *A. Witmanni*. The latter is said to be a cross between *A. vulgaris* and *A. olympica* Boiss. *Aquilegia Stuarti* flowers three weeks before any other Columbine, hence plants raised from seed come always true. For twenty years, treating this plant as a hybrid, I have never failed in raising plenty of plants, which in flowering have never shown any tendency to revert to either parent. Strange to relate, within the last few years, this Columbine has failed to flower as freely as formerly. Last year, however, I never saw it finer, the individual flowers being four inches across, and very high coloured. Can any cause be assigned why the flowering of this plant is not so certain as formerly? The true form of *A. glandulosa* I have grown from Gregor of Forres for fifty years.

A Siberian species had the same bad habit of failing to flower, and, when I first worked with the plant, I considered it a great triumph to force it to flower by lifting the plants from the open and planting them in pots, and placing them in a small greenhouse, where the blooms came so refined and elegant that they were the admiration of everyone. I have great doubts that Mr Gregor of Forres' strain of *Aq. glandulosa* is now in existence, as it has been crossed and worked with by many florists. The last plants of the

true strain I saw in the garden of Mr W. Boyd, at Ormiston, near Roxburgh Station, many years ago. Of course, there is plenty of so-called *Aq. glandulosa* to be had, but the strains are too free flowering to be true. *Aq. Stuarti* has always been true and stable, with no reversion to any other Columbine whatever.

In closing these remarks, I consider it more satisfactory to the general reader that plants which I had personally worked with should be instanced to illustrate statements, which may lead to controversy on the subject of evolution, in preference to information derived from books and other sources on that subject, and this must be my apology for seeming egotism.

Facsimile of Grant to George Sinclair, made by Queen Mary at Hermitage Castle, October 16th 1566.

It has been known for some time—but apparently is not very generally, even yet—that there is in existence the register of an appointment made by Queen Mary at Hermitage Castle, on the 16th of October 1566, the facsimile of which is given. (Plate XIV.) It is so very unlike anything that anyone would have supposed, as to go far to bear out Hosack's contention of the business character of Mary's ride to Hermitage, which, if she took the line traditionally alleged from Jedburgh, was not much less than sixty miles, there and back.

The paper called *Queen Mary at Jedburgh*, by Mr Small, a member of the Scotch Society of Antiquaries, and printed in their Proceedings for (I think) 1881, gives the fact and the date of the appointment; but this does not fully convey the curious irrelevancy of the document to the circumstances as given in the official statement, namely, that she had gone to Hermitage in desperate haste to see Bothwell, on hearing of his being wounded.

Even Claude Nau, Mary's faithful secretary, seems to have known nothing of Hermitage being a royal fortress—one of the most important castles on the Borders—but supposes, naturally enough, that Mary's visit was an attention to Bothwell, the Warden of the Marches, who had been somewhat severely wounded in a hand-to-hand struggle with one of the most conspicuous of the Border warriors, who maintained a kind of independence of both England and Scotland.

One is inclined to think that Hermitage had probably been intended as the next place on Mary's route after the

Jedburgh assizes (which she had sat through after hearing of Bothwell's wound), and that a heap of papers were awaiting her signature there. A search in the register has failed to show any other document of the same date. But there is a special reason why this one should have been promptly entered; the volume containing it is entirely, or mostly, in the handwriting of the father of the recipient of the appointment. That is not in any way remarkable, except as a fine specimen of a monopoly.

The system of monopolies appears to have helped to bring on the civil wars in the next century, especially in England. This seems perfectly clear, that no will made in Edinburgh was to hold good unless it was drawn up by Master George Sinclair, son of Thomas Sinclair, writer.

That Mary had not gone to Hermitage till after the six days of the assizes was Lord Woodhouselee's discovery in the last century, and it certainly strengthened the arguments of those who did not believe she had murdered Darnley in order to marry Bothwell.

That she returned from Hermitage to Jedburgh the same day may probably have been due to the prosaic consideration of the intense inconvenience of a royal visit to a feudal castle, with the lord laid up.

The change from the singular to the plural in the references to the sovereign in the register is owing to Mary's marriage to Darnley, who was created King Consort.

This, though it probably helped to turn his head, was by no means so inappropriate as people suppose, who think Darnley was a private individual; for his position was that of heir to the English crown after Mary herself.

The photograph of the register was taken by Mr Bashford of Portobello, who—though it is a most excellent representation—considers it slightly distorted by the inevitable curve of the original, from the binding of the volume.

We are indebted to Mr Maitland Thomson, the actual custodian of the register, for the transcript of this entry, with the contractions expanded. There is a good deal of superfluous spelling as it is, and without his assistance the document would hardly have been legible.

(From) Copy made by Mr J. Maitland Thomson from the register (in the ordinary charter-hand) in the writing of Thomas Sinclair, the father of the recipient of the grant—who was himself an official in the Scotch Register House—of the appointment of George Sinclair to an office in Edinburgh, made by Queen Mary at Hermitage Castle, on the 16th of October 1566. The office seems to be that of the *writer of wills*, which has no exact modern representative.

"Ane letter maid to Maister George Sinclare, sone lauchfull to Thomas Sinclar, writtare, of the gift of the office of the formyng, writting and perfiting of all and quhatsumevir testamentis and inventaris thairof quilkis heirefter salhappen to be confirmit be the commissaris of Edinburgh, ffor all the dayis of his lyfe; quhik office pertenet to umquhile Maister Williame Kowy advocat of befoir and was usit be him be virtue of our Soverane ladyis gift under hir gracis prive seile maid to him thairuponne, and now throw his deceis become again in thier hienes hands and at thair dispositioun: with power to the said Maister George to use and exerce the said office, and to intromet with and uplift all feis, dewties and casualiteis aucht and wount thairof, siclike and als frelie as the said umquhile Maister Williame had for using of the samin in tymes bipast, induring his lifytyme, as said is, but ony revocatioun, &c.; with command in the samin to the saidis commissaries of Edinburgh, procuratour fischall and collectouris of the cottis of saidis testamentis, to resave and admit the said Maister George in the foirsade office, fortifie, assist and manteine him theirintill, and that thai conferme nor admit to be confirmit na maner of testamentis nor inventaris but sic as onlie ar formit, written or subscrivit be the said Maister George eftir the tennour of the gift, as thai will anser to thair majesteis upon thair obedience, &c. At Armetage, the xvi day of October the yeir of God jmvclxvj yeiris."

Per Signaturam.

*Additional Notes on the Hermitage Grant.**By Miss Russell.*

Since writing the notes which accompanied the photograph of the register of Queen Mary's grant to George Sinclair, obtained by me for the Berwickshire Naturalists' Club, I have found Thomas Sinclair, with another son, in the Laing charters (which seem likely to prove a valuable source of information, chiefly as regards Scotland.)

The father is called "writer to the Privy Seal," and Henry Sinclair appears as a witness.

They appear in a document about some property in or near Haddington; and one's impression is, that everybody concerned, including the Sinclairs, was connected with that town. The date, I think, is 1564. I do not remember the number of the charter, but the names are in the copious index.

I find also that (though it is difficult for us to realise such a monopoly as that which ordained that no will in Edinburgh should hold good unless drawn up by George Sinclair) something analogous did exist—in fact—down to the present generation.

The old Scottish town clerks had the monopoly of all business connected with property held by *burgage-tenure*; that is to say, they had the right to be paid for it, whether it was executed by them or not.

The late Mr Paton of Selkirk, who died at an advanced age—not much, if at all, before 1885—had this right, and was probably one of the last holders of it.

Edwardley. Communicated by MR GEORGE WATSON,
Curator of Jedburgh Museum.

In the year 1093 Malcolm III., king of Scotland, greatly incensed against king Rufus, entered England at the head of a large army. With him went two of his sons, the Princes Edward and Edgar. Commencing to lay waste Northumberland, he besieged Alnwick Castle, the garrison of which was reduced to extremity. But we need not here repeat the story of the treacherous act—so familiar to every reader of Scottish history—which deprived the besieging army of its leader, and Scotland of its king. His son Edward, “bayth plesand and preclair,”* strove vainly to avert the inevitable defeat, but he was severely wounded in the rout which ensued. Forced to leave the field of battle, Scotland’s uncrowned king, probably accompanied by a few faithful followers, held his course due north-west, and on November 15th, the third day from the disaster on the banks of the Alne, reached Jedburgh Forest, in the shades of which he succumbed to the effects of his wounds. “He died,” says Fordun, “at Edwardisle, in the forest of Jedwart.”†

* Metrical Chronicle of Scotland.

† “*Qui XVII. Kalendas Decembris prænotata tertia die post patrem apud Edwardisle foresta de Jedwart fulis cessit.*”—Skene’s Fordun.

Meanwhile Prince Edgar returned to his royal mother, and upon him lay the obligation of breaking to her the information of the sad disaster. The saintly Margaret did not long survive the shock caused by the news of the death of both her husband and son, but died a few days afterwards. She was buried in Dunfermline Abbey. Thither was brought the corpse of Prince Edward, in order to be interred in the same place. Here also were entombed the remains of Edmond, Ethelred, King Edgar, Alexander I., and David I.—all brothers of Prince Edward. In this place King Malcolm's body, which had been picked up on the field of battle at Alnwick by two peasants, and conveyed in a common cart to Tynemouth, where it found a resting place for fully three half centuries, afterwards found a place of sepulture. An old chronicler states that the remains of Prince Edward, who, this historian supposes, was buried with his father at Tynemouth, were also removed at the same time; but this statement is void of support.

Can the locality where Prince Edward died be other than the place now known as Long Edwardley, near Jedburgh? We think not. Long Edwardley is the name of a field immediately behind Allarton House, on the boundaries of that old Border town. When John Ainslie, the eminent geographer, made his plan of Jedburgh about 1771, it was then part of the lands of Hyndhousefield. "Edwardiale," according to Fordun, was the place where Prince Edward departed this life, and is described by that writer as being in the Forest of Jedburgh. The name signifies the Lea or Ley, i.e., The Meadow, of Edward, and doubtless was so named on account of Prince Edward having died there. Ridpath, in his *Border History*,* unfortunately splits it into two words, and renders it "Eadward-Isle," thus separating the genitive termination from the parent word, and so converting its meaning. Being situated to the south-east of the town, it is thus in a direct line with Alnwick, which therefore makes it all the more probable that Long Edwardley is the place in question.

* P. 49, n.

Doubtless the Prince expected to find at Jedburgh a sanctuary in its church or refuge in its castle. That saintly monarch, David I., had such a reverence for the memory of his brother Edward, that he visited the place where that Prince had drawn his last breath, and, having assigned boundaries to it, handed it over to the charge of the Canons of Jedburgh Abbey.* This was some time before the death of his son, Prince Henry, which took place in the year 1152. In the Charter granted by William the Lion in 1165 to the same Canons, to whom he confirms the grant, it is there termed "Eadwardesle."† The grant of this place to these Canons is also to be found in the Charters of Robert the Bruce. As the result of the Reformation, the Abbey was robbed of the lands which so long had been her property and support. The Barony of Ulston, which belonged to the monks, and in which the lands of Hyndhousefield were situated,‡ was then divided amongst several proprietors.§ Nevertheless, we find both the barony of Ulston and the lands of Hyndhousefield indissolubly mentioned in several charters given under the Great Seal at the commencement of the 17th century. As before stated, there appears on Ainslie's Plan of Jedburgh, which was drawn about the year 1771, the name Long Edwardley, applied to a field in the lands of Hyndhousefield.¶ It may at first seem that the prefix "Long" is an objection to the theory of these places being one and the same, but on reference to the deeds of this property it is seen in one dated 1741, which is the oldest of the set, that it was then termed "Edwardeslee." The addition of "Long" must

* *Et Edwardisley, sicut eam meus pater perambulavit et divisas monstravit.*—Charter of Prince Henry to the Canons of Jedburgh Abbey printed in Morton's "Monastic Annals," p. 50, and Watson's "Jedburgh Abbey," p. 159.

† *Et Eudwardisley, sicut ego eam perambulaui et divisas monstravi.*—Foundation Charter of Jedburgh Abbey, by David I.

‡ Watson's "Jedburgh Abbey," p. 160; Morton's "Mon. Annals," p. 56.

§ "Inquisitorium Rotarum Abbreviatio," Vol. II.

¶ Jeffrey, "Hist. of Roxburghshire," Vol. II., p. 373.

§ Plan in Jedburgh Museum.

therefore have been made between 1741 and 1771, and its use, as may be seen in the deeds, has been maintained ever since. Why the appendage to Edwardley was made is not our task to trace, sufficient is it for us to point out that while the name of the adjoining town has, on account of the frequency of its usage, gone through nearly one hundred different modes of spelling,* Edwardley, now Long Edwardley, having been much less frequently used, has seen far fewer fluctuations in orthography, and, unless for the perhaps unnecessary appendage "Long," it has practically the same arrangement of letters as it had eight hundred years ago.

* Origines Parochiales Scotiæ

*Visit of the Right Hon. Francis North, Lord Keeper
Guilford, to Seaton Delaval, towards the end of the
Seventeenth Century.*

Members of the Club who read the following reprint will be grateful to Sir Edward Ridley for calling the Editor's attention to it in a letter of Dec. 16th 1900, in which he says:—

"I observe in reading the notice of the Club's visit to Seaton Delaval, which appears in the lately issued volume, that the writer has (probably) not had his attention called to "The Lives of the Norths," Vol. i., paragraphs 202, 208, which contain an account of Lord Keeper Guilford's (then Lord Chief Justice) visit to Delaval when 'riding' the Northern Circuit. This took place about 1680; certainly between 1675 and 1683, and is perhaps of some interest, as it states how Sir Ralph Delaval entertained the Judge to dinner, and to discourse about his harbour and his salt and coals."

From Tynemouth his lordship, by invitation, went to dine at Seaton Delaval. Sir Ralph Delaval* entertained us exceedingly well; and not so much with eating and drinking, which appertains properly to the brute, and not to the man, but with very ingenious discourse, and showing to us many curiosities, of which he himself was author, in that place. The chief remarkable, there, was a little port, which that gentleman, with great contrivance, and after many disappointments, made for securing small craft that carried out his salt and coal; and he had been encouraged in it by King Charles the Second, who made him collector and surveyor of his own port, and no officer to intermeddle there. It stands at the mouth of a rill (as it is called) of water, which,

* Created a Baronet by Charles II., in 1680. The baronetcy became extinct in the eighteenth century.

running from the hills, had excavated a great hollow, in the fall, as it ran. The ground at the sea is a hard impenetrable flat rock; and, for cover of the vessels, which else, in the rage, must be dashed to pieces, Sir Ralph had built, or rather often re-built, a pier of stone that fended off the surge to the north-east, and, at high water, gave entrance near a little promontory of the shore turning in by the north; and, at low water, the vessels lay dry upon the rock. This had been built of square stone with and without cement; but all was heaved away with the surge; and for a great while nothing could be found strong enough to hold against the lifting and sucking of the water. At length Sir Ralph, at an immense cost, bound every joint of the stone, not only laterally but upright, with dovetails of heart of oak let into the stone; and that held effectually: for if the stones were lifted up they fell in their places again. This little harbour was apt to silt up with the sea sand; for remedying of which he used the back water of his rill and that kept the channel always open; and for that end he had an easy and sure device; which was sluice-gates built across the channel of the rill which, during tide of flood, were shut and so the water gathered to a great head above till low water; and then the sluices opened let the gathered water come down all at once, which scoured away the sand that every tide lodged upon the rock, and washed it as clean as a marble table. All this we saw, with his salt pans at work about it, and the petit magazines of a marine trade upon the wharf: and so he reaped the fruits of his great cost and invention; and if in the whole the profit did not answer the account, the pleasure of designing and executing, which is the most exquisite of any, did it.

I must not omit one passage which showed the steady constancy of that gentleman's mind; which was that, at the beginning of dinner, a servant brought him a letter, wherein was an account of a bag of water which was broke in his greatest colliery. Upon which, folding up the letter, said he, "My lord, here I have advice sent me of a loss, in a colliery, which I cannot estimate at less than £7,000; and now you shall see if I alter my countenance or behaviour from what you have seen of me

already." And so fell to discoursing of these bags of water and the methods to clear them, as if the case had been another's and not his own. He said his only apprehension was that the water might come from the sea; and "then" said he "the whole colliery is utterly lost: else, with charge, it will be recovered." Whereupon he sent for a bottle of the water, and finding it not saline as from the sea was well satisfied. Afterwards we enquired if the water was conquered, and we were told it proved not so bad as he expected. For it seems that although £1,700 was spent upon engines, and they could not sink it an inch, yet, £600 more emptied it; so that it had no more than the ordinary springs; and, in about six weeks, he raised coal again. He said that chain pumps were the best engines, for they draw constant and even; but they can have but two stories of them, the second being with an axle-tree of seven or eight fathom; and the deepest story is wrought by buckets and a wheel and ropes with the force at the top.

[From the "Lives of the Norths," by Dr Jessop, Vol. I., Sections 202, 203.]

Crows: A Country Rhyme. Communicated by JAMES
SMAIL, Edinburgh.

LATE and early flee the crows :
On the wing as morning daws,
Ceasing only in their flight
When the gloamin' meets the night.
Watchers o' the earth and sky,
Coming changes they decry :
Every watchfu' shepherd knows
His best weatherglass the crows.

When at morn they seek the shore
Landward storms will rage and roar ;
When they seek the lily lee
Fair and lown the day will be ;
When they roost in upland heather
Steady is the summer weather ;
When they search the wheatland vast
Worm and weevil perish fast ;
When on stubble close they gather
Wi' the morn comes nippy weather ;
When they skim the muirs in snaw
Frost will soon gie way to thaw ;
When in crowd they skyward soar,
Wheel and sail in great uproar,
Jerrin', cheerin' without stint,
They but haud their parliament,
And uphaud their ancient laws :
Steadfast is the *House o' Crows*.

Reference to Plan of Alnwick Castle.

(PLATE XV.)

The *Black* lines on the plan represent what was built before A.D. 1750, of which the greater portion (List I.) is still existing, and another portion (List II.) is now non-existent, or else, in a few cases, completely altered.

The *Red* lines represent what has been built since A.D. 1750, principally by the first Duke of Northumberland.

List I.—Before 1750, still existing. (Coloured Black.)

- Ab. The Abbot's Tower.
- Au. The Auditor's Tower; also sometimes called the "Caterer's" Tower, and the "Chancellor's" Tower.
[Tate's Alnwick, Vol. I., pages 386 and 85.]
- Av. The Avener's Tower.
- B. The Barbican, with portoullis and gate-house.
- C. The Constable's Tower.
- M. The Middle Gate House.
- N. The Norman Gateway; leading into the Keep.
- P. The Postern Tower; now a Museum for British and Roman antiquities.
- W. The Water Tower. "Anciently a *corner* or *ravine* tower, but called in modern times the *Water Tower*, from the circumstance of the tank that acts as a reservoir for the Castle having been placed in it. It now (1866) contains the *clock*, which has two faces and five sonorous bells." [Tate, footnote, I. 386.]
- g. The Western Garret.

List II.—Before 1750, completely altered, or non-existent. (Black.)

- Ar. Site of the razed Armourer's Tower, which, together with the adjoining curtain wall on each side of it, and the Falconer's Tower, was razed in the time of the 1st Duke, and replaced by the new Tower at F and wall from F to K.

- Ch. The Chapel, within the Inner Bailey; removed by the 1st Duke in 1755.
- Ci. The site of the old cistern, fed by a conduit from the "Howling Fields."
- F. The approximate site of the razed Falconer's Tower.
- Q. The "Checker House," removed by the 1st Duke.
- Ra. Site of a former "Ravine Tower," now filled up by a length of walling. [Tate I., 255 and 374.]
- Re. The site of an ancient tower, called the "Gardener's" [Clarkeson's Survey, A.D. 1567], and shown in a plan of A.D. 1650 [Tate I., 97]. Upon this site was built by the 1st Duke the "Record Tower," in which Duke Algernon placed his Museum of Egyptian antiquities; and the present tower is the result of further remodelling in more recent years.
- S.S. Here formerly were stables, demolished by the 1st Duke, their place being taken by the buildings surrounding two sides of the new large quadrangular area, shown in red between Av. and D. [Tate I., 386.]
- g. g. were formerly two little garrets, mentioned by Clarkeson [A.D. 1567]; now only one, rebuilt, which may be called the East Garret.

List III.—More recent than 1750. (Coloured Red.)

- D. A large reception hall, also used as a coach-house.
- F. A square tower at the end of the shortened curtain wall, standing nearly on the site of the old Falconer's Tower.
- H. A turreted projection upon the wall, built by the 1st Duke, now called Hotspur's Chair. [Tate I., 386].
- K. The Prudhoe Tower, built by the 4th Duke; begun in 1854.
- L. "The new Lion Gate-House, through which lies the road to the Castle Gardens or Barneyside" [Tate I., 386], (occupying the site of old buildings, demolished.)
- T. The modern Terrace Wall, crowning the slope which faces the river.

Note on the Beluga.

WHILE Mr G. G. Butler, the Editing Secretary of the Club, was coming down the river St. Lawrence from Quebec in the autumn of 1900, he observed from the deck of the steamer some gleaming white objects in the blue water, which at a distance he mistook successively for masses of ice, and for white buoys for mooring yachts; but their appearance and disappearance, and the machine-like smoothness of their movement as they rotated slowly above the surface, forbade either supposition; and on asking a French Canadian seaman, he was informed that they were "Marsouins," (porpoises.) Their brilliantly pure white hide marked them as being no ordinary porpoise. On communicating with Captain Norman of Berwick, he received this reply: "I find that your white porpoise must evidently be *Beluga Leucas*, one of the dolphin family, closely related to the Narwhal, 12 to 16 feet long, and cream-white. These white whales feed on fishes, which they follow far up the St. Lawrence and other rivers."

An excellent Plate is shown of this mammal in the volume of Jardine's Natural History, upon Whales, (Edinburgh, 1837, p. 204, Plate XV.), where the account given of it agrees with that of Captain Norman. "They are not at all shy," it is there stated, "but often follow the ships, and tumble about the boats in herds of thirty or forty; bespangling the surface with their splendid whiteness."

"The original drawing for the Plate was taken by Mr Syme, from an individual which for nearly three months was observed to inhabit the Firth of Forth, passing upwards almost every day with the tide, and returning with the ebbing of the waters. During this time it was generally known under the name of the White Whale, and was supposed frequently to be in pursuit of salmon. Many fruitless attempts were made to secure it; but at length it was killed by the salmon-fishers, by means of spears and fire-arms. It was purchased by Mr Bald of Alloa, and transmitted by him to Professor Jameson, and is now (1837) in the Royal Museum at Edinburgh."

Note on the Sleep of Birds. By G. G. BUTLER.

On the morning of December 21st 1900, just before dawn, after the disastrous gale of the 20th (which occurred on the night following the Club's Anniversary Meeting) the keeper at Ewart Park was walking through the pine wood known as the "Wilderness," which lost much fine timber in the gale, and just as he passed a large prostrate Scotch fir, he startled a Cushtat from its sleep; out of the top branches, which were now close to the ground, the bird flew with its usual clatter of wings, and made off. There seems to be little doubt that the Cushtat must have gone to rest before the storm of the night, have slumbered through the tossing caused by the gale, through the short period while the tree was falling, and, with its claws still firmly clasped on the branch, have slept soundly in its new position until awakened by the passing keeper.

*Unveiling of Memorial Window to the late Dr James
Hardy in Coldingham Parish Church.*

Tribute of the Berwickshire Naturalists' Club.

THE members of the Berwickshire Naturalists' Club have paid an appropriate tribute to the memory of their late Secretary, James Hardy, Esq., LL.D., by placing a window of stained glass and a brass tablet in the east wall of Coldingham Church. Many there are who will be remembered in stained glass windows and memorial tablets—and in that term only. Not so, we think, will it be with Dr Hardy. Dr Hardy's true memorial will be found in the influence that he left behind, which, to those who knew him—and to others through them—will be a sweet savour of good things.

The ceremony of unveiling and dedicating the Memorial took place on Tuesday afternoon, the 26th of June, and among those present were:—Mr A. H. Evans, Cambridge, President; Mr Bolam, Berwick, Treasurer; Colonel Milne Home, Caldera, Duns, Organizing Secretary, and Mrs Milne Home; Mr Butler, Ewart Park, Wooler, Editing Secretary, and Mrs Butler; Mr Boyd, Faldonside; the Misses Buchan, Coldingham; Mr Fitzroy Bell, Temple Hall; Mrs Caverhill and Mr J. Caverhill, Hillend; Mrs Carr, Wooler; Miss Clark; Mr Dudgeon, Northfield; Miss Duncan, Copeland; Mr and Mrs Duncan, Coldingham; Mr, Mrs, and the Misses Davidson (2), Hill House; Mr and Mrs Edington and Miss

Thorburn, Lumsdaine; Mr John Ferguson, F.S.A. (Scot.), the Hermitage, Duns; Miss Fender, Law House; Mr and Mrs Gunn, Berwick; Mr Wm. Hardy, Harpertown; Rev. H. M. Lamont, Coldingham; Mr Lindores; Mr James S. Mack, Coveyheugh; Mr Joseph Mack, Berrybank; the Misses Munro (2); Mr Macvie; Rev. T. Marjoribanks, Houndwood; the Misses Mair (2), Bunkle Manse; Dr Macdougall, Coldingham; Rev. David Paul, LL.D., Edinburgh; Mr J. Robertson, Coldingham; Rev. Evan Rutter, Spittal; Mrs Rule; Dr Stuart, Chirnside; Mr James Somervail, Broomdykes; Miss J. Thorburn, Burnhall; Mr Joseph Wilson, Duns; Mrs Wright, Ecclaw; Mrs Wood, Galashiels.

Apologies for absence were received from Colonel Hope of Cowdenknowes; the Rev. J. J. M. L. Aitken, Established Church, Ayton; Captain Norman, R.N., Berwick; Captain Carr Ellison, Hedgeley; and Mr J. Smail, 7 Bruntsfield Crescent, Edinburgh.

The preliminary portion of the service was conducted by the Rev. H. M. Lamont, who, after engaging in prayer, read Isaiah, chapter 54, from the 11th verse. Then followed the singing of the prose psalm 84, reading Revelation, chapter 7, from 9th verse, and the singing of hymn 308, "Still on the homeward journey."

The Rev. Dr. Paul preached from Psalm 119, verse 18:—"Open Thou mine eyes that I may behold wondrous things out of Thy law." It was, he said, the prayer of one whose interest and study were the law of God. It was the prayer of one who was seeking for light in the interpretation of that law. He had been attempting to understand it, and had become convinced that he needed divine illumination.

Having pointed out that the scientific study of Nature was almost dissociated from the thought of God, and that it was possible to be deeply versed in the wonders of creation without being led thereby to praise God, Dr Paul said:—Now, what we recognise in James Hardy, in connection with whose memory we are assembled here to-day, is, that he was a reverent, devout student of Nature, who did not set the Deity aside as an unnecessary, or merely hypothetical factor in creation, but in whose view the works of Nature—which he loved and studied all his life—were the works of God. If

it were otherwise, it would not be fitting that our meeting to-day should be in a Christian sanctuary, still less would it be appropriate that a window in this ancient House of God, which for centuries has been redolent of Christian worship, should bear his name, and hand down his memory to unborn generations. The motto on the window is one of the imperishable utterances of the Great Founder of the Christian religion, and the line from our English poet is chosen to indicate the attitude which the Club believed Dr Hardy to hold in regard to the relation of Nature to the Creator. It is this attitude of his, taken in connection with the whole work of his life, that justifies us in holding this public service, and dedicating a stained window in memory of him within this church.

It would not be sufficient justification for our action here to say that Dr Hardy was Secretary to the Berwickshire Naturalists' Club for 27 years, and that he discharged his duties in that capacity with conspicuous ability and faithfulness. That might and would be a reason for honouring his memory in other ways, but not in this particular way. Every member of the Club recognises that his services were worthy of the most grateful recognition that we can yield to them. The interests of the Club were, as we know, very dear to him, and its prosperity a matter of anxious concern to him. He spared himself no trouble or labour to ensure that its work should be successfully carried on from year to year. The numerous details connected with every meeting received his careful attention. He had to visit localities beforehand for the purpose of drawing up a definite programme. He had to write many letters in connection with each. He had to obtain permission for the Club to enter private grounds. He had to fix hours and arrange for conveyances, and, generally, to see that nothing was neglected which could contribute to the success of the meetings; and we know how perfectly everything was arranged. Everything was left to him, and he did not omit the smallest duty. He was the mainspring of the Club's action. Presidents come and go, but the Secretary is the permanent official on whom the life and vigour of the Club depends. And it is pleasing for us to remember

that twice during his lifetime we gave substantial testimony to our appreciation of his services, as it is a satisfaction to us to meet here to-day, and in this last public act to perpetuate his memory. But if the fact that he was so faithful a servant to the Club as its Secretary would not altogether justify the particular form which our recognition takes to-day, neither would the fact that he was a distinguished student of Nature, though his ability and success in that line of study were quite exceptional. To study was the work of his life, and he applied himself to it with a zeal and industry which never flagged. Up to the very end his interest in it was unabated. It was not one branch of the natural science that he pursued, but many.

One has only to glance over the list of his contributions to the Club's Proceedings to see how varied and manifold were the subjects which he studied. Flowering plants, mosses, lichens, birds, butterflies, beetles, spiders, do not exhaust the list. And in connection with all of them he made interesting discoveries, and by his observations added new species to those already recorded. And everything relating to the antiquities of the Borders had a special charm for him. He was an authority in Border genealogy; the history of every castle and keep was known to him; he was familiar with the legends and traditions of every district; nothing came amiss to him that touched Border life—either in the present or in the past—from the stone age to the present day. And his accumulating stores of knowledge he utilised for the benefit of the Club. Year by year, from 1839 downwards for nearly sixty years, he enriched our Proceedings by valuable papers—botanical, ornithological, entomological, antiquarian. Almost all his work was done in connection with the Club, to whose Proceedings he contributed no fewer than 264 papers or notices.

His industry was prodigious. He would copy not only long papers, but whole books verbatim. Even his correspondence was phenomenal, for he never wrote a short letter, but entered minutely into every subject he was consulted on. He must have been observing and recording his observations,

studying and writing all through his life. It is easy to say that during the greater part of his life he had nothing else to do. But, as a rule, it is just those people who have abundance of leisure time who accomplish least. The fact that he was not compelled to do the work he did adds to his credit. He was a born student, and he had disciplined himself in his younger days to resist the calls of idleness, until work became a positive pleasure to him. And, as a Club, we reaped the benefit; indeed, this whole Border district lies under a heavy debt of obligation to him. One can only regret that he did not gather up his store of observation into one or two complete books, and that so much knowledge has died with him of which he alone possessed the key. Few of us have known anyone with a mind more many-sided and accurate. And his reputation was not confined within the limits of the Club. He had scientific correspondents in all parts of the kingdom, and mainly through him our Club was widely known. It was gratifying to us, as it would be to himself, when the University of Edinburgh, his own University, crowned his work by bestowing upon him the honorary degree of Doctor of Laws.

While it is natural and proper, therefore, that his memory should be preserved and honoured among us, on account of his scientific attainments and his services to the Club, we claim for him something more as a justification of our presence here to-day for the purpose of unveiling in this church a window that will bear his name. We claim for him not only that he was a man of science, but a Christian man of science. The light in which he viewed the outward Nature was partly an inheritance of his birth, and was partly furnished by his own reflection. Born in a family of the Secession Church, with a father who was an elder in that Communion, he would be imbued from his childhood with the idea of God as the Creator and Governor of this world. And when in after life he studied the facts and processes of Nature for himself, he found no reason to abandon the faith of his youth. A man so well informed, and with so penetrating an intelligence, could not be blind to the difficulties that present themselves to the Christian man of

science; but, with all the enlightened and liberal views which such a man could not fail to hold, we are assured by those who knew him best that he regarded Nature as part of God's great revelation to man, to be studied with all the reverence that befits the creature exploring the works of the Creator. With a modesty and a reticence which belonged to him partly as a characteristic of his Scottish countrymen, and partly as peculiar to himself, he did not bring his theistic and Christian views of Nature into the foreground; but none the less did they permeate all his thinking, and all his work.

As has been well said of him already by one who knew him well:—In the great verities of the Christian revelation he was a convinced believer on independent grounds, and he was content to wait with confidence until fuller light should dispel the apparent contradictions between the manifestations of the Divine in external Nature and in man's history. He was free from the common conceit of believing that the two things which we have not yet found a method of reconciling are therefore irreconcilable. He discerned the finger of God both in Nature and in Revelation, and he approached each of them in the spirit of the Psalmist's prayer:—"Open thou mine eyes that I may behold the wondrous things out of Thy law." That a window then, in this ancient house of prayer, should be erected to his memory, and called by his name, is not only excusable; it is appropriate and befitting. Gratefully placed here by the Berwickshire Naturalists' Club, and willingly accepted by those who have the charge of this building, we trust it may stand here for many generations as a memorial both of the man and of his work. Glory be to the Father, and and to the Son, and to the Holy Ghost, as it was in the beginning, is now and ever shall be, world without end. Amen.

The Rev. H. M. Lamont said their purpose was to unveil a window in stained glass to the memory of the late Dr James Hardy, which had been given by the members of the Berwickshire Naturalists' Club, with which he was so long and intimately connected. It had been with very great willingness and gratitude received by the heritors of

the parish, and by the minister and elders of the congregation. He then asked the President of the Club to unveil the window.

Mr A. H. Evans, before unveiling the window, said:—I feel it to be the greatest privilege to be permitted to unveil this monument to Dr Hardy, the old friend of so many of us assembled here to-day—as well as of many who greatly regret their absence—and the kindly and energetic Secretary of the Club, as we have just been reminded, for so long a period.

Having spoken these words, Mr Evans withdrew the canvas covering, and exposed fully to view the beautiful window, which represents Christ preaching and drawing lessons from the lilies of the field. At the top are the words, "The earth is full of Thy riches"; and at the foot, "Consider the lilies of the field." Below the window is a brass tablet on which is inscribed:—"Through Nature up to Nature's God. This window is placed here by the Berwickshire Naturalists' Club in loving memory of James Hardy of Old Cambus, who was for 27 years Secretary of the Club, and whose remains lie in the adjoining churchyard. Obiit, 30th June 1898." The first sentence is in red lettering, and the remainder in black, and there are red lines round the tablet crossed at the angles.

The window, which is of very chaste design, was supplied along with the tablet by Mr Baguley, Newcastle-on-Tyne.

After a short prayer from the Rev. H. M. Lamont, Miss Dickson, the organist of the church, sang with fine effect, "Consider the Lilies," her accompaniment being played by Mrs Caverhill.

After the congregation had sung hymn 206, "Blest be the tie that binds," the proceedings were closed with the Benediction, pronounced by the Rev. Dr Paul.

OBITUARY NOTICE.

Lady John Scott Spottiswoode. By MISS WARRENDER.

By the death, last March, of Lady John Scott Spottiswoode of Spottiswoode, the Berwickshire Naturalists' Club has lost not only one of its oldest and most venerated members, but a link with a past of which in her own county she was the last survivor. Born on Midsummer's Day, 1810, she had known those who had been face to face with the '45; she remembered well the wild excitement caused by the victory of Waterloo, and she had talked with Sir Walter Scott.

On both sides she came of a loyal and ancient stock. Spottiswoode of Spottiswoode is among the oldest territorial families of Berwickshire, and to her last day Lady John never forgave the ancestor who had affixed his seal to the Ragman Roll; while her mother's family, Wauchope of Niddrie, is the oldest family in Mid-Lothian. Thus the intense love for her own country, and especially for the Borderland, with its legends and ballads, which was so great in Lady Jehn, seems almost to be her natural heritage.

Most of her childhood and all its happiest days were spent at Spottiswoode, which she loved passionately. The periodical journeys to London, made in leisurely fashion in the ponderous family coach, were looked on as seasons of exile; and she was never so happy as when wandering over the moors, or fishing in the burns of Lammermuir.

Her marriage, in 1836, to Lord John Scott did not take her far away, for though some part of each year was spent at Cawston, his Warwickshire property, they always had a home within sight of the Cheviots; Cowdenknowes, Newton Don, Stichill, or Kirkbank. From the latter they explored all the nooks and corners of the hills. No one knew so well every camp, standing-stone, or ancient drove road. The things of the past were of absorbing interest to her from her earliest childhood. From the papers in the old charter-chest to the scraps of songs and traditions which she picked up in the cottages, nothing came amiss, and her wonderful memory preserved them all. In addition to that natural intuition which marks the true antiquarian, her historical and technical knowledge made it very difficult to deceive her, whether the object in question was a flint arrow-head, a bronze implement, or a would-be ancient ballad. To the last she retained her keen interest in archæology, and when over eighty would spend hours, regardless of wind and rain, watching the excavation of what might prove to be a pre-historic burial place. Hardly a likely-looking knowe on Spottiswoode was left unexplored, and the valuable museum, which years of patient labour had collected in the Eagle Hall, shows the thoroughness of her researches.

She was an extremely good botanist, and had a better knowledge of mineralogy than most people, tastes which she owed to her father's early training. No one was better acquainted with the habitats of rare plants, and no one took more pains to protect them from ruthless spoliation. She always preferred to see flowers growing in their natural surroundings, than to gather or transplant them; and though her neighbours may have smiled at the railed enclosure which she placed round the only known habitat in Berwickshire of the *Osmunda regalis*, it was her sole means of protecting that rare fern, and a practical expression of her opinions.

Lord John died in 1860, Mr Spottiswoode in 1866, and Mrs Spottiswoode in 1870; and as her two brothers had already predeceased her, Lady John found herself on her mother's death tenant for life of Spottiswoode, and from

that time she rarely left it, except for her periodical visits to Cawston, and her yearly stay in the far north, the one holiday in the year that she allowed herself. Her life at Spottiswoode was a busy one; as in addition to two farms in her own hands, and the planting and thinning of many acres of woodland, the welfare of her poorer neighbours was her incessant care. Besides constant visits to her own dependants, she went through all the cottages on every farm on the estate, twice a year; and there was not a sick or poor person in the whole countryside who had not occasion to bless her open-handed generosity. By no one will she be more missed than by the poor. They will remember the charity that never turned a deaf ear to their wants, and the warm heart that felt so keenly for their joys and sorrows. To her own friends and relations her loss means the quenching of a strong personality, which to the last retained all the fascination of brilliant wit, of originality rising to genius, and of the deepest and most enduring family affection. By the outside world she will be best remembered as one of the last of the "sweet singers of Scotland." "Annie Laurie," her best-known song, was written about 1835, but all her life long her feelings found their strongest expression in music and verse.

Lady John will not easily be forgotten, but the best memorial that later generations can dedicate to her memory is the following of her example in the love of the past, in the care for old customs and traditions, and in a reverence for the landmarks of bygone days.

OBITUARY NOTICE.

Mrs George Grey Butler. By WATSON ASKEW-ROBERTSON,
Esq., Pallinsburn.

On April 30th 1901, in Doddington Churchyard, a highly valued Honorary Member of this Club was laid to rest, to the inexpressible grief of her husband and children, and to the deep sorrow of a wide circle of friends, in every rank of life.

Mrs G. G. Butler of Ewart Park, a countess of the Holy Roman Empire, was descended from an ancestry, on both sides, that for many long years had played an important part in history.

Her great grandfather, Count St. Paul, served as an officer with great distinction in the Austrian army, during the seven years war, and for his services was created a Count of the Holy Roman Empire—a title transmitted to his great grand-daughter.

Her grand-father, Sir Horace St. Paul, a colonel in the army and M.P. for Bridport, and her uncle, Henry St. Paul, M.P. for Berwick, both sat many years in Parliament; and

when early in the last century this country was threatened with an invasion by France, they with their brother, Major Charles Maximilian St. Paul (long the popular and well-known master of the Galewood Hounds) were the means of raising the Cheviot Legion, of which Count St. Paul was colonel, a body of cavalry, that only wanted the opportunity to show that valour and courage, which for centuries has distinguished our borderers, and which our own yeomanry have proved in South Africa exists to-day in undiminished lustre.

Her father, the late Sir Horace St. Paul, was for upwards of 50 years possessor of Ewart, and for some time Member of Parliament for East Worcestershire, where he had large estates. For many years he was a very well-known character in Northumberland, and by those honoured with his friendship was highly appreciated for his kindness and gentlemanly bearing, his desire to make those about him happy and prosperous, and for those great intellectual gifts which made him a most interesting companion. In early life he had seen the evil which arose from excessive drinking, too common in those days, in the upper as well as in the lower classes of society, and he became, when a comparatively young man, a strong advocate of the temperance movement, and gave very practical evidence of his belief in the soundness of his views and sentiments, though always tolerant and courteous to those who differed from him on this great question.

On her mother's side Mrs Butler was descended from one of our very oldest Northumbrian houses. The lineage of the Greys goes back into days that it is difficult to trace; but through the mist of years, and across the fading centuries, that house has ever produced sons and daughters worthy of their progenitors, and adding, as years roll on, new names that bring honour and renown to the family tree. From the middle of the last century, for many years, few names were better known in Northumberland than those of John Grey of Dilston, and George Annett Grey of Milfield, the grandfather and father of the lady whose decease we so greatly lament.

When quite a child Mrs Butler was deprived by death of a mother's care and training, and for ten years, till

her father was taken away from her, she was his constant and inseparable companion. Very early in life she displayed considerable literary ability, and when quite a child amused herself by writing some books, that not only showed great talent and imagination, but also contained a fund of knowledge it was difficult to realize that one so young, and leading so very quiet and retired a life, could acquire.

Her father, a great admirer of Shakespeare, fostered in her a love and reverence for that greatest of all masters of human nature, and she was a life-long student of his writings. After her marriage, when she came with her husband to reside at Ewart, she promoted the establishment of a club for Shakespeare readings, which met on certain days at the houses of the different ladies that composed it, and tended to make those immortal plays more widely known, and appreciated, than they had been before on Tillside.

In 1891, after a long illness, in which she nursed him most devotedly and tenderly, Sir Horace St. Paul died, and at the age of 23 she was left alone in the world; but after two years, she was fortunate enough to form a most happy marriage with her cousin, and for eight years few people have passed pleasanter or more useful lives. United to a husband of kindred literary tastes, blessed with healthy and clever children, surrounded by objects of art, and collections of every sort and kind that can create interest or charm the eye; possessing a most delightful home and beautiful surroundings, endowed with talents and tastes that enabled her to take a wide and intelligent interest in all local, as well as scientific matters, her life promised to be one of advantage to her neighbours, and a blessing to herself and family. But such was not to be. In the prime and flower of womanhood, just when a mother's care seemed most needed by her children, and a wife's help required by a husband, like her mother (seemingly too soon) she was called away, and her pure bright spirit passed into the presence of its Creator.

Her memory will long be cherished by her family and her intimate friends, by those resident on her estate, and those whom her kindness assisted.

In her the Berwickshire Naturalists' Club had a very ardent supporter, and one who not only welcomed them to her house, and displayed to them the treasures accumulated by her ancestors, but delighted especially in accompanying her husband to the meetings of the Club, and adding to her store of antiquarian lore and botanical and geological information, that she was never wearied of increasing.

"Bright be the place of thy soul,
No lovelier spirit than thine,
E'er burst from its mortal control
In the orbs of the blessed to shine.
On earth thou wert all but divine,
As thy soul shall immortally be ;
And our sorrow may cease to repine,
When we know that thy God is with thee."

"Light be the turf on thy tomb,
May its verdure like emerald be ;
There should not be the shadow of gloom
In aught that reminds us of thee.
Young flowers and an evergreen tree
May spring from the spot of thy rest,
But nor cypress nor yew let us see,
For why should we mourn for the blest."

OBITUARY NOTICE.

Major-General Sir William Crossman, K.C.M.G. By
SIR GEORGE B. DOUGLAS, BART., Springwood Park.

THERE is no doubt that it is socially, rather than scientifically, that Sir William Crossman—whose death, at the age of seventy, occurred in April 1901—will be remembered by the members of the Berwickshire Naturalists' Club. A naturalist in any strict sense of the word he certainly was not; for, supposing that he had once known them, he had forgotten during his long residence in China and Japan even the local names of common birds and plants. On the other hand, I have seldom known a man who had deeper or more unfeigned enjoyment of the beauties of natural scenery. The contrast of the sheltered wooded banks of Tweed or Teviot after the wind-swept links of Holy Island was in particular an unfailing source of pleasure to him. Among the subjects studied by the Club, his chief interest was in archæology—notably in such undertakings as the excavation of the Roman station of Aesica. The excavation of the monastic buildings at Holy Island was carried out under his personal superintendence, and occupied him much. But, indeed, everything connected with the history of his island-domain was his hobby, and at the time of the death of the first Lady Crossman, in 1898, he had even made some progress in compiling a History of Lindisfarne. Had he completed it, it would have been a work of conscientious research. But after his loss, he travelled for a year, and the MS. was then abandoned, and never I think resumed.

In connection with his large interest in the Tweed salmon-fisheries, Sir William took, also, a great interest in the natural history of the Salmon, devoting a good deal of time to the study of statistics relating to that mysterious creature, as he appears in various parts of the globe. But, in fact, almost any local subject of profitable enquiry was sure to command his interest and sympathy. His reading was wide—diffuse rather than scholarly; and his love of poetry almost equal to his love of natural scenery. Indeed, I have known him, on more than one occasion, to commit thoughts to writing in that form. All these things, however, occupied but a secondary place in his career, which had been primarily that of a man of action—one who at the time when I knew him might have said with Tennyson's Ulysses,

"Much have I seen and known; cities of men,
And manners, climates, councils, governments."

Indeed, fond as he was of Tweedside and Northumberland, the love and desire of travel never left him. As I have said, it is as a man rather than a *savant* that he will be remembered by those who knew him. His entirely unassuming though dignified deportment was, in one of his distinguished services, singularly attractive. Whilst to those who had more than a passing acquaintance with him, the genuineness and transparency of his nature, his sense of duty—naturally strong and strengthened by his military training—and most of all the warmth and kindness of his heart must remain for ever as a cherished recollection. Sir William served as President of the Club for the year 1890.

Meteorological Record at Lilburn Tower for 1900.

Communicated by EDWARD J. COLLINGWOOD, Esq.

			Mean Temperature.	Mean Height of Barometer.	Rainfall.
			Degrees.	Ins.	Ins.
January	...	...	38·05	29·50	3·28
February	...	...	32·98	29·62	4·10
March	...	...	37·66	29·69	2·50
April	...	...	46·53	29·52	2·08
May	...	...	49·95	29·63	1·68
June	...	...	56·85	29·57	3·52
July	...	...	62·42	29·66	1·00
August	...	...	56·27	29·62	4·21
September	...	...	54·85	29·70	1·76
October	...	...	46·35	29·54	5·90
November	...	...	41·81	29·38	4·76
December	...	...	43·14	29·34	2·19

REMARKS.

Mean temperature for the year ... 47·246 degrees.
 „ height of barometer for the year 29·564 inches.
 Total Rainfall for the year ... 36·98 inches.

The reading of the barometer was taken every morning, and the mean for the month deducted therefrom.

The mean temperatures are deducted from the daily mean taken every morning from the readings of a maximum and minimum thermometer, in the shade.

Notes of Rainfall and Temperature at West Foulden and Rawburn during 1900. By JAMES HEWAT CRAW, for Dr Charles Stuart, Chirnside.

WEST FOULDEN.						RAWBURN.					
		RAINFALL.		TEMPERATURE.				RAINFALL.		TEMPERATURE.	
		Ins.	100ths.	Max.	Min.			Ins.	100ths.	Max.	Min.
January	...	4	26	52	28	4	80	48	22		
February	...	4	28	54	14	3	70	44	16		
March	...	2	21	55	15	1	40	46	16		
April	...	0	83	74	29	2	70	70	27		
May	...	1	8	71	35	1	40	65	32		
June	...	3	84	71	36	4	50	76	38		
July	...	1	89	79	40	3	50	75	40		
August	...	5	42	75	38	5	30	74	38		
September	...	1	32	73	35	2	30	72	36		
October	...	4	63	61	29	4	90	58	27		
November	...	4	93	61	29	4	70	56	28		
December	...	0	97	55	31	4	10	51	28		
		35	61	79°	14°	43	30	76°	16°		

NOTE.

West Foulden is six miles from sea at Berwick-on-Tweed; 250 feet above sea-level.

Rawburn is 24 miles from sea; 920 feet above sea-level.

*Donations to the Club from Scientific Societies, Exchanges,
etc., up to October 1901.*

Andersonian Naturalists' Society, *Annals of*, Vol. II., Part 2.

Anthropological Institute of Great Britain and Ireland,
Journal of, Vol. XXIX. (New Series, Vol. II.), Nos. 3 and
4, November and December 1899.

Antiquaries of Newcastle-upon-Tyne, Society of, *Proceedings*,
Vol. IX., pp. 217-320. Index to Vol. IX., pp. 1-8, 25-58.
Proceedings, Vol. X., pp. 1-16, 33-108. Parish Registers
of Baptism, pp. 149-172. *Archæologia Æliana*, Part 55,
Vol. XXX., Part 2. Part 56, Vol. XXXIII., Part 1.

Bath Natural History and Antiquarian Field Club, *Pro-
ceedings*, Vol. IX., No. 3, 1900.

Belfast Naturalists' Field Club, *Annual Report*, Series 2,
Vol. IV., Part 6, 1898-9.

Boston, U.S.A. Boston Society of Natural History, *Memoirs*,
Vol. V., Nos. 6 and 7. *Proceedings*, Vol. XXIX., Nos. 9-14,
pp. 179-322. Occasional Papers, No. 4, Vol. I., Part 3.
"Geology of the Boston Basin," by Wm. O. Crosby.

Cornwall. Royal Institution of, *Journal*, Vol. XIV., Part 2,
1901.

Croydon Microscopical and Natural History Club, *Proceedings
and Transactions*, February 21st 1899 to January 16th 1900.
Do. February 20th 1900 to January 15th 1901.

Dublin. Royal Dublin Society, *Scientific Transactions*, Vol.
VII., Parts 2-7, June 1899 to January 1900. *Scientific
Proceedings*, Vol. IX., Parts 1 and 2, October 1899 to March
1900. Index to *Scientific Proceedings and Transactions*
1877-1898; viz.:—*Proceedings*, Vols. I.-VIII. *Transactions*,
Vols. I.-VI. *Economic Proceedings*, Vol. I., Parts 1 and 2.

Edinburgh Geological Society, Transactions, Vol. viii., Part 1.
Glasgow, Natural History Society of, Transactions, Vol. v.,
Part 3, 1898-9.

Manchester Literary and Philosophical Society, Memoirs and
Proceedings, Vol. xlv., Parts 4 and 5, 1899-1900; Vol.
xlv., Parts 1 and 3, 1900-1901.

Montgomeryshire. Collections Historical and Archæological,
Vol. xxxi., No. 3., December 1900.

Norfolk and Norwich Naturalists' Society, Transactions,
Vol. vii., Parts 1 and 2, 1899-1901.

Nova Scotian Institute of Science, Proceedings and Trans-
actions, Vol. ix., Part 1; Vol. x., Part 2.

Royal Physical Society, Proceedings, Session cxxix., 1899-
1900.

St. Louis, U.S.A. Transactions of the Academy of Science
of St. Louis, Vol. ix., Nos. 6, 8, 9, with title page,
prefatory matter, and Index, January 1st to December
31st 1899; Vol. x., Nos. 1-8.

Tufts College Studies, No. 6.

Upsala University, Geological Institution of, Bulletin, Vol. v.,
Part 1, No. 9.

U.S.A. Geological Survey. Bulletins, 150-176. Twentieth
Annual Report, Parts 2, 3, 4, 5 (with maps), and 7.
Monographs, Vol. xxxii., Part 2; Vol. xxxiii.; Vol.
xxxiv.; Vol. xxxvi.—xl. Preliminary Report on the
Cape Nome Gold Region—Alaska.

Yorkshire Naturalists' Union, Transactions, Part 23.

General Statement of Account—December 1900.

INCOME.

	£	s.	d.	£	s.	d.
Balance due from Treasurer as per last account	4	2	0			
Arrears received during the year	15	7	0			
Entrance Fees	9	10	0			
Subscriptions	154	8	0			
Back Numbers of Proceedings Sold, etc.	4	7	0			
Balance brought from Hardy Memorial Fund	1	8	0			
Balance due to Treasurer ..	6	6	11			
				£195	8	11

EXPENDITURE.

Paid for Printing Proceedings, 1899	74	17	0			
Do. do. Bunkle Records, Part II.	55	10	6			
Engraving Plates, etc., for Proceedings, 1889	10	10	0			
Printing Circulars, Stationery, Postage, Carriages, etc.	38	11	6			
Account for Salmon	5	9	6			
Expenses of Meetings	7	0	5			
Berwick Museum, Rent of Room, etc.	3	10	0			
				£195	8	11

I certify the above Account to be correct,

THOS. DARLING,

30th December 1900.

Numerical List of Books in the Library. 30th March 1901. Communicated by the HON. TREASURER.

		Vols. or Parts.	Parts.
1	American Museum of Natural History Report, 1 vol.	1	1
2	Andersonian Naturalists' Society, Annals 1 vol.	1	2
3	Anthropological Institute of Great Britain and Ireland, 24 vols. ..	24	85
	Do. List of Fellows	1	1
4	Archæologia Æliana, 8 vols. ..	8	13
5	Antiquaries of Scotland, Society of, Proceedings, 20 vols.	20	20
6	Arkansas, Geographical Reconnaissance of, Report, 1	1	1
7	Australian Museum, Records, 3 vols. Do., Reports of Trustees, 6 Nos. Do., Catalogue of Birds, 3 vols. Do., Supplement, 1 vol. ..	3 6 3 1	22 6 3 1
8	Bath Natural History and Antiquarian Field Club, 8 vols.	8	26
	Do., Pamphlet, 1	1	1
9	Belfast Naturalists' Field Club, 4 vols.	4	22
	Do., Report, 1	1	1
10	Bodleian Library, Lists 3	3	3
11	British Association, Report, 4 vols. ..	4	4
	Do., Pamphlets, 2	2	2
12	Boston Society of Natural History, Journal, 4 vols.	4	11
	Do., Pamphlet, 1	1	1
	Do., Reports of Custodian, 5 Nos. Do., Proceedings, 27 vols. ..	5 27	5 80
	Do., Memoirs, 4 vols.	4	45
	Do., Occasional Papers, 7 vols. ..	7	9
	Forward	140	365

		Vols. or Parts.	Parts.
	Brought forward	140	365
13	Cardiff Naturalists' Society, Report and Transactions, 23 vols.	23	31
	Do., Pamphlet, 1	1	1
14	Chicago Academy of Sciences, Proceedings, 1 vol.	1	1
15	Conchology, Journal of, Pamphlets, 2	2	2
16	Cornwall Royal Institution, Journal, 5 vols.	5	13
17	Croydon Microscopical and Natural History Society, Reports, 7	7	7
	Do., Proceedings and Transactions, 16 Nos.	16	16
	Do., Pamphlet, 1	1	1
18	Cumberland and Westmerland Association for the advancement of Literature and Science, Transactions, 12 Nos.	12	12
19	Dublin Royal Society, Scientific Transactions, 7 vols.	7	85
	Do., Scientific Proceedings, 9 vols.	9	56
	Do., Index	1	1
	Do., Economic Proceedings 1 vol.	1	2
20	Dumfriesshire and Galloway Natural History and Antiquarian Field Club, Transactions, etc., 11 Nos.	11	11
21	East of Scotland Union of Naturalists' Societies, Proceedings, 2 vols.	2	2
22	Edinburgh Botanical Society, Proceedings and Transactions, 8 vols.	8	18
	Do., Pamphlet, 1	1	1
23	Edinburgh Geographical Society, Transactions, 6 vols.	6	20
	Do., Pamphlets, 3	3	3
24	Edinburgh Royal Society, Proceedings, 12 vols.	12	16
	Do., Pamphlet, 1	1	1
	Forward	270	665

		Vols. or Parts.	Parts.
	Brought forward	270	665
25	Essex Institute, Proceedings, 2 vols.	2	10
	Do., Bulletin, 30 vols.	30	358
	Do., Pamphlets, 5	5	5
26	Essex Naturalist, Transactions, 4 vols.	4	10
	Do., Do., New series 7 vols.	7	84
	Do., Pamphlets, 2	2	2
27	Fishery Board for Scotland, Reports, 4 vols.	4	4
28	Geologists' Association, Proceedings, 15 vols.	15	126
	Do., Indexes, 2	2	2
	Do., Annual Reports, 11	11	11
	Do., Supplemental No. 1	1	1
	Do., Lists of Members, 4	4	4
29	Geological Society, Reprints from Quarterly Journal, 3	3	3
30	Geological and Polytechnic Society of the West Riding of Yorkshire, Report of Proceedings	1	1
31	Glasgow Geological Society, Trans- actions, 8 vols.	8	15
32	Glasgow Natural History Society, Pro- ceedings and Transactions, 4 vols.	4	10
	Do., New Series, 5 vols.	5	11
	Do., Index, 1	1	1
33	Glasgow Philosophical Society, Pro- ceedings, 22 vols.	22	27
	Do., Index, 1	1	1
	Do., Reprint, 1	1	1
34	Glasgow Society of Field Naturalists, Transactions, 4 parts	4	4
35	Harvard College Museum of Compa- rative Zoology, Reports	23	23
	Do., Bulletins	2	2
36	Hawick Archæological Society, Meetings, 14 Nos.	14	14
37	Hull Scientific and Field Naturalists' Club, Transactions, 1 vol.	1	1
	Forward	447	1396

		Vols. or Parts.	Parts.
	Brought Forward	447	1396
38	Indiana. Geographical Survey of, 1 Report, and 1 Map ..	2	2
39	Indian Meteorological Memoirs, 2 vols. Do., Table of Contents ..	2 1	9 1
40	Iowa, Geology of, 1 vol. ..	1	2
41	Leeds Philosophical and Literary Society, Annual Report, Nos. ..	23	23
42	Leeds Naturalists' Club and Scientific Association, Report 1 ..	1	1
43	Liverpool Literary and Philosophical Society, Proceedings, 47 vols. ..	47	47
44	Manchester Literary and Philosophical Society, Proceedings, 15 vols. ..	15	15
	Do., Memoirs, 3rd Series, 7 vols. ..	7	7
	Do., do., 4th Series, 10 vols. ..	10	27
	Do., do., New Series, 5 vols. ..	5	20
	Do., Pamphlets ..	2	2
45	Manchester Microscopical Society, Transactions and Report ..	12	12
46	Meriden Scientific Association, Trans- actions, 1 vol. ..	1	1
47	Milwaukee Public Museum, Reports ..	2	2
48	Montgomeryshire, Collections Historical and Archæological, 24 vols. ..	24	66
	Do., Supplement ..	1	1
	Do., Index ..	1	1
49	The Naturalist, 60 Nos. ..	60	60
50	Nature, 8 Nos. ..	8	8
51	Newcastle-upon-Tyne Society of Anti- quaries, Proceedings, 1 vol. complete Do., 4 vols. incomplete ..	1 4	32 15
52	New Jersey Natural History Society, Journal, 2 vols. ..	2	3
53	Norfolk and Norwich Naturalists' Society, Transactions, 5 vols. ..	5	19
54	Northamptonshire Natural History Society and Field Club, Journal, 7 vols. ..	7	56
	Forward	691	1828

		Vols. or Parts.	Parts.
	Brought forward	691	1828
55	Northumberland and Durham and Newcastle-upon-Tyne, Natural History, Transactions, 8 vols. ..	8	14
56	Nova Scotian Institute of Natural Science, Proceedings and Transactions, 4 vols. ..	4	9
57	Owen's College, Manchester Museum, Reports, 2 vols. ..	2	2
58	Perthshire Society of Natural Science, Proceedings, 1 vol. ..	1	6
	Transactions and Proceedings, 1 vol.	1	2
59	Plymouth Institution and Devon and Cornwall Natural History Society, Proceedings, 8 vols. ..	8	23
60	Powysland Club (see No. 48) ..		
61	Royal Physical Society, Proceedings, 11 vols. ..	11	22
62	St. Louis Academy of Sciences, Trans- actions, 6 vols. ..	6	68
63	Scottish Geographical Magazine, 1 vol.	1	1
64	Scottish Natural History Society, Transactions, 1 vol. ..	1	1
65	Selkirkshire, History of, or Chronicles of Ettrick Forest, 2 vols. ..	2	2
66	Selborne Magazine, 1 vol. ..	1	1
67	Sheffield Naturalists' Club, Report, 1	1	1
68	Smithsonian Institution, Reports, 36 vols.	36	36
	Do., Miscellaneous Collections, 25	25	25
	Do., Unclassified Publications, 5	5	5
69	Sundries	111	111
70	Trenton Natural History Society (see No. 52)		
71	Tufts College Studies, 5 Nos. ..	5	5
72	United States Comptroller of the Currency, 2 Reports (3 copies of each)	6	6
73	United States Army Signal Service 3 maps	3	3
	Forward	929	2171

		Vols. or Parts.	Parts.
	Brought forward	929	2171
74	United States Department of Agriculture, Reports, 7 vols. ..	7	7
	Do., Year Books, 2 vols. ..	2	2
	Do., Bulletins, 8 vols. ..	8	8
	Do., N. American Fauna, 13 vols.	13	13
75	United States Geological and Geographical Survey of the Territories, Annual Reports, 11 vols. ..	11	11
	Do., Bulletins, 5 vols. ..	5	21
	Do., Final Reports, or Monographs, 9 vols. ..	9	9
	Do., Miscellaneous Publications, 14 Nos. ..	14	14
	Do., Unclassified Publications, 12 Nos. ..	12	12
76	United States Geological Survey, Annual Reports, 45 vols. ..	45	45
	Do., Monographs, 13 vols. ..	13	13
	Do., Bulletins, 33 Nos. ..	33	33
77	Upsala University Geological Institution, Bulletin, 4 vols. ..	4	7
	Do., Sundries (Donations) ..	68	68
78	Wanganui (New Zealand), Public Museum, Report, 1 ..	1	1
79	Wisconsin Academy of Sciences, Arts and Letters, 1 vol. ..	1	1
80	Wisconsin Geological and Natural History Survey, Bulletins ..	2	2
81	Yorkshire Naturalists' Union, Transactions, 21 Nos. ..	21	21
82	Yorkshire Philosophical Society, Report, 1 ..	1	1
		1199	2460

Volumes, &c., 1199 divided into 2460 parts or numbers.

ERRATA.

PART II.

Page 202, line 8 from bottom—for "204" read 295.

Page 202, line 15 from bottom—the words "(Plate IX.)" following "Armorer's Tower" should occur instead on page 205, line 5 from bottom, after the word "Postern."

Page 207, line 25 from top—for "valiently" read valiantly.

Page 271, line 13 from top—for "sylvatium" read sylvaticum.

Page 274, line 7 from bottom—for "Trollins Europæus" read Trollius Europæus.

BERWICKSHIRE NATURALISTS' CLUB.

LIST OF MEMBERS, 1901.

Those marked with an Asterisk are Ex-Presidents.

Note.—Where A, C, and H occur before the names of Members this indicates

Associate Member.

Corresponding Member.

Honorary Member.

		Date of Admission.
	Adamson, Lawrence William, LL.D., Eglington Hall, Alnwick	Dec. 20, 1900
	Aiken, Rev. James Marshall Lang, Ayton ...	Oct. 10, 1888
	Albe, Herr Johannes, The Hawthorne, Duns ...	Oct. 10, 1894
	Allan, Andrew L., Riverside Mill, Selkirk ...	Oct. 12, 1892
	Alder, William, Halidon, Berwick	Oct. 13, 1880
A	Amory, Andrew, Alnwick	
A	Anderson, Adam, Cumledge Mills, Duns	
	Anderson, Dr Thomas Scott, Lintalee, Jedburgh	Oct. 20, 1884
	Andrews, Hugh, Swarland Hall, Felton ...	Oct. 14, 1891
	Archer, Joseph, Alnwick	Oct. 9, 1889
	Archer, Robert, Solicitor, Alnwick	do.
	Arkless, Rev. E., Earsdon Vicarage, Newcastle	Oct. 14, 1896
	*Askew Robertson, Watson, Ladykirk, Norham ...	Oct. 11, 1860
	Atkinson Clark, George Dixon, Belford Hall ...	Oct. 9, 1889
	Aytoun, Col. Andrew, B.A., 28 Inverleith Row, Edinburgh	Sept. 29, 1875
	QQ	

	Balfour, Charles Barrington, F.S.A. (Scot.), Newton Don, Kelso	Oct. 8, 1890
	Ballard, George Hartley, Grammar School, Berwick	Oct. 12, 1899
	Barr, John, 46 Main Street, Tweedmouth ...	Oct. 8, 1890
H	Barwell Carter, Mrs. The Anchorage, Berwick	
	Bates, Cadwallader J., Langley Castle, Langley-on-Tyne	Oct. 14, 1891
	Batters, Edward A. L., B.A., LL.B., F.L.S., The Laurels, Wormley, Herts	Oct. 10, 1883
	Bell, Robert Fitzroy, Advocate, Temple Hall, Cold- ingham	Oct. 12, 1898
	Bernard, Daniel, Marchmont House, Greenlaw ...	do.
	Bird, George, F.S.A. (Scot.), 38 Inverleith Place, Edinburgh	Oct. 12, 1881
	Blair, Robert, F.S.A., Harton Lodge, South Shields	Oct. 12, 1899
	Blanco, Hippolyte J., Architect, F.S.A. (Scot.), A.R.S.A., 25 Rutland Square, Edinburgh	Oct. 10, 1894
	Bolam, John, Bilton House, Lesbury	Sept. 30, 1869
	Bolam, George, Bilton House, Lesbury	Oct. 10, 1888
	Bolam, George, F.Z.S., Berwick	Oct. 15, 1879
	Bolland, Rev. W. E., Embleton Vicarage, Christon Bank, R.S.O.	Oct. 14, 1896
	Bosanquet, Robert Carr, Rock Hall, Alnwick ...	Oct. 12, 1887
	Bosanquet, C. B. Pulleine, Rock Hall, Alnwick ...	Sept. 29, 1869
	Boswell, General J. J., C.B., Darnlee, Melrose ...	Oct. 10, 1888
	Bowhill, James William, 29 St. Andrew's Square, Edinburgh	Oct. 12, 1898
	Bowie, Alexander, Prioryhill House, Canonbie, Dumfriesshire	Oct. 11, 1882
	*Boyd, John B., Cherrytrees, Yetholm	Sept. 18, 1841
	*Boyd, William B., Faldonside, Melrose	Oct. 12, 1853
	Brewis, Nathaniel Thomas, M.D., F.R.C.P.E., 23 Rutland Street, Edinburgh	Oct. 12, 1896
	Broadway, John, Banker, Alnwick	Oct. 13, 1880
	Browell, Edmond John Jasper, East Boldon, R.S.O., South Durham	Oct. 20, 1884
H	Brown, Miss Helen M., Longformacus House, Duns	
	Brown, Col. Alex. Murray, Longformacus House, Duns	Oct. 11, 1882
	Brown, J. A. Harvie, Dunipace, Larbert, Stirlingshire	Oct. 13, 1897
	*Brown, T. Craig, Woodburn, Selkirk	Oct. 15, 1879
	Brown, Major Robert, Littlehoughton, Lesbury	Sept. 29, 1863
	Brown, Rev. J. Wood, M.A., 16 Corso Regina, Elena, Florence	Oct. 9, 1889
	Brown, Robert, Todlaw, Duns	Dec. 20, 1900
	Bruce, David, Stationmaster, Dunbar	Oct. 11, 1893
	Bruce, Sir Gainsford, one of His Majesty's Judges of the Supreme Court, Gainslaw House, Berwick	Oct. 10, 1894

LIST OF MEMBERS

iii

Brunton, James, Broomlands, Kelso	Sept. 25, 1868
Burleigh, Rev. J., Ednam, Kelso	Oct. 11, 1893
Burman, Charles Clark, M.R.C.S., Alnwick ...	Oct. 8, 1890
Butler, George G., M.A., F.G.S., Ewart Park, Wooler	Oct. 10, 1894
Cairns, John, Alison Place, Alnwick	Oct. 9, 1889
Campbell, John MacNaught, F.Z.S., 5 Franklin Terrace, Glasgow	Oct. 10, 1883
Campbell Swinton, J. L., Kimmerghame, Duns	Oct. 13, 1897
Carmichael, Sir Thomas Gibson, Bart., M.P., Castle Craig, Dolphinton, Peeblesshire	Oct. 12, 1898
Carmichael, Robert, Rosybank, Coldstream ...	Oct. 8, 1890
Carr, Robert, Hetton Hall, Belford	do.
*Carr Ellison, J. B., Hedgeley, Glanton	Sept. 26, 1872
Carr Ellison, Col. Ralph H., 1st Royal Dragoons, Hedgeley, R.S.O.	Oct. 14, 1896
Carr, Cuthbert Ellison, 1 Collingwood Street, New-castle-on-Tyne	Oct. 11, 1893
Carr, Rev. Charles Blackett, Longframlington, R.S.O.	Oct. 20, 1884
Carr, J. Evelyn, Heathery Tops, Berwick ...	Dec. 20, 1900
Carse, John Thomas, Amble, Acklington ...	Oct. 10, 1888
Caverhill, John, Jedneuk, Jedburgh	Oct. 11, 1894
Christison, Dr David, Secretary of the Society of Antiquaries of Scotland, 20 Magdala Crescent, Edinburgh	do.
Clark, G. D. Atkinson [see Atkinson-Clark]	
Clay, B. H., Wembury House, Plymstock, So. Devon	May 30, 1861
Clay, Rev. Patrick Andrew, Ravensdowne, Berwick	Oct. 14, 1891
Cleland, George, Bank of Scotland, 61 Leith Walk, Leith	Oct. 9, 1895
Cochrane, John, Willow Bush, Galashiels ...	Oct. 8, 1890
Cochrane, Kenneth, Newfaan, Galashiels ...	Oct. 14, 1896
Cochrane, Walter, Lynhurst, Galashiels ...	Oct. 12, 1899
Cookson, C. Stirling Lisle, Renton House, Grants House	Oct. 20, 1884
Cooper, Rev. A. E., B.A., St. Peter's, Hooton, Chester	Oct. 12, 1899
Cowan, Rev. Charles J., B.D., F.S.A. (Scot.) Morebattle, Kelso	Oct. 13, 1880
Craig, William, M.D., C.M., F.R.C.S.E., F.R.S.E., 71 Bruntfield Place, Edinburgh	Oct. 12, 1881
H Craig, Mrs M. G., 22 Buccleuch Street, Hawick	
*Craig Brown [see Brown]	
Craw, James Hewat, Foulden West Mains, Berwick-on-Tweed	Dec. 20, 1900
Crawford, William, Solicitor, Duns	Aug. 15, 1862
Crossman, Lawrence Morley, Cheswick House, Beal	Oct. 9, 1889

H	Culley, Mrs, Broxton House, Keynsham Road, Cheltenham	
	Culley, A. H. Leather, Bamburgh, R.S.O.	Dec. 20, 1900
	Culley, Rev. Matthew, Esk Lands, near Durham	Oct. 10, 1893
	Cumming, James, 9 Braid Road, Morningside, Edinburgh	Oct. 12, 1881
	Cunningham, John, Sec Tor, Axminster	Oct. 8, 1890
	Curle, James, junr., F.S.A. (Scot.), Prior Wood, Melrose	Oct. 11, 1893
	Daglish, John, Rothley Crag, Cambo	Oct. 11, 1893
	Dalziel, Frank J., Tweedholm, Walkerburn	Oct. 14, 1891
	Dand, Middleton H., Hauxley Cottage, Acklington	Oct. 28, 1859
H	Dand, Miss Sarah, 10 Lockharton Terrace, Colinton Road, Edinburgh	
	Darling, Adam, Bondington, Berwick	Oct. 12, 1899
	Darling, Thomas, F.C.S., Adderston House, Berwick	Oct. 16, 1878
	Darling, Alexander, Governor's House, Berwick-on-Tweed	Dec. 20, 1900
	Davies, Arthur Ellson, West Savile Road, Edinburgh	Oct. 12, 1898
	Dees, Robert Richardson, Wallsend, Newcastle	Sept. 27, 1876
	Denholm, James, M.D., Meadowfield House, Brandon, Durham	Oct. 31, 1877
	Dent, John, Custom House Chambers, Newcastle	Oct. 9, 1896
H	Dickinson, Miss Margaret R., Norham	
	Dickinson, Robert, Longcroft, Lauder	Oct. 10, 1894
	Dickson, Patrick Thorp, Creagmhor, Aberfoyle, N.B.	Oct. 28, 1857
	Dobie, Rev. W., M.A., Ladykirk, Norham	Sept. 27, 1876
	*Douglass, Sir George Brisbane, Bart., Springwood Park Kelso	Sept. 27, 1876
	*Dudgeon, John Scott, Longnewton Place, St. Boswells	Sept. 26, 1862
	Dun, John, Craigpark, Galashiels	Oct. 12, 1898
	Dunlop, Archibald Miller, 63 High Street, Lanark	Oct. 13, 1886
	Dunlop, James, Castle Terrace, Berwick	Oct. 9, 1895
	Dunlop, John, Solicitor, Berwick	Sept. 30, 1870
	Dunn, Thomas, 5 High Street, Selkirk	Oct. 14, 1891
	Dunn, William, Redden, Kelso	Oct. 12, 1898
	Elder, Rev. J. L., Coldstream	Oct. 13, 1897
A	Elliot, John, 2 South Liddle Row, Newcastleton	
	Elliot, Robert Henry, Clifton Park, Kelso	Oct. 15, 1879
	Elliot, Stuart Douglas, S.S.C., 40 Princes Street, Edinburgh	Oct. 10, 1894
	Ellis, The Hon. and Rev. William C., Bothalhaugh, Morpeth	Oct. 9, 1896
	*Ellison, [see Carr Ellison]	
	Erskine, Charles, The Priory, Melrose	Sept. 29, 1875

LIST OF MEMBERS

*Evans, Arthur H., M.A., F.Z.S., 9 Harvey Road, Cambridge	Sept. 29, 1875
Evans, William, F.R.S.E., 38 Morningside Park, Edin- burgh	Oct. 13, 1886
Fairbrother, Rev. James, The Vicarage, Warkworth	Oct. 14, 1896
Fairfax, Colonel Sir William Ramsay, Bart., Maxton, St. Boswells	Oct. 20, 1884
Falconer, Allan A., Elder Bank, Duns	Oct. 11, 1894
*Farquharson, Rev. James, D.D., 4 Mardale Crescent, Edinburgh	June 29, 1865
Fenwick, Dr John C. J., Embleton Hall, Longfram- lington, R.S.O.	Oct. 9, 1895
Ferguson, James, Bailiffgate, Alnwick	Oct. 10, 1894
*Ferguson, John, F.S.A. (Scot.), Solicitor, Duns	Sept. 27, 1876
Findlay, Rev. John Agnew, M.A., 7 Inverleith Terrace, Edinburgh	Oct. 10, 1894
Fleming, Rev. Hugh, Mordington, Berwick	Oct. 9, 1895
Forbes, J. A., Commander R.N., West Coates, Berwick	Sept. 29, 1875
Ford, John, Royal Bank of Scotland, Duns	Oct. 12, 1892
Fortune, George, Kilmeny, Duns	Oct. 12, 1887
Fraser, Thomas, M.D., Berwick	Oct. 12, 1881
Friar, John Edmond, Grindon Ridge, Norham	June 25, 1863
Frost, Leonard, The Mead, Beal	Oct. 12, 1898
Gayner, Francis, 20 Queen Square, London, W.C.	Oct. 14, 1896
Gibb, Robert Shirra, M.B.C.M., Boon, Lauder	Oct. 10, 1883
Giles, Arthur, F.R.S.G.S., 107 Princes Street, Edin- burgh	Oct. 13, 1897
C Goodchild, J. G., F.G.S., H.M. Geological Survey (Scot.), Museum of Science and Art, Edinburgh	
Graham, Rev. M. H., Maxton, St. Boswells	Aug. 30, 1866
Graham, Thomas, Alnwick	Oct. 14, 1890
Grahame, Thomas, The Avenue, Berwick	Oct. 12, 1899
Gray Smith, Rev. W. H., Fogo, Duns	Oct. 13, 1897
Green, Rev. Charles E., B.A., Chulmleigh, Exeter, Devon	Oct. 31, 1877
Green, Robert Yeoman, 11 Lovaine Crescent, Newcastle	Oct. 20, 1884
Greenwell, Rev. Canon, M.A., D.C.L., F.R.S., F.S.A., Hon. F.S.A. (Scot.), Durham	July 25, 1861
Gregson, Delaval Knight, Berwick	Oct. 20, 1884
Greig, James Lewis, Advocate, Eccles House, Kelso	Oct. 12, 1898
Greig, Thomas, Wester Wooden, Roxburgh	Oct. 10, 1883
Grey, Sir Edward, Bart., M.P., Fallodon, Chathill	Oct. 10, 1888
Grey, John, Broomhill, Acklington	Oct. 12, 1899
H Grey, Mrs, Lorbottle, Whittingham	

	Guthrie, William Grant, 6 Loekhart Place, Hawick	Oct. 13, 1886
	Haddington, The Right Honourable the Earl of, Tynningham House, Prestonkirk	Oct. 31, 1877
	Hall, William Thompson, Troughend, Woodburn	Oct. 12, 1881
	Halliday, John, 5 Holland Park, London, W. ...	Sept. 29, 1875
	Hardy, George, Oldcambus East Mains, Cockburnspath	Oct. 10, 1894
H	Hardy, Mrs. Eden House, Gavinton, Duns	
	Hay, Robert Mordaunt, Duns Castle, Duns ...	Oct. 14, 1896
	Heatley, W. R., 4 Linden Villas, Gosforth ...	Oct. 9, 1895
	Hepburn, Sir Archibald Buchan, Bart., Smeaton Hepburn, Prestonkirk	Sept. 27, 1876
	Henderson, George, Upper Keith, East Lothian	Oct. 20, 1884
	Herriot, David, Sanson Seal, Berwick ...	Oct. 20, 1884
	Heslop, Richard Oliver, 12 Akenside Hill, Quayside, Newcastle-on-Tyne	Oct. 8, 1890
	Hindmarsh, Thomas Chas., Barrister-at-Law, 1 Essex Court, Temple, London	Oct. 31, 1877
	Hindmarsh, William Robson, South Lodge, Alnwick	Oct. 13, 1898
*	Hindmarsh, W. T., F.L.S., Alnbank, Alnwick ...	Sept. 26, 1872
	Hilson, James Lindsay, Kenmore Bank, Jedburgh	Oct. 14, 1896
	Hilson, Oliver, J.P., Lady's Yards, Jedburgh ...	Oct. 10, 1894
	Hodgson, John Crawford, Abbey Cottage, Alnwick	Oct. 13, 1880
	Hogg, John, Quixwood, Grants House ...	Oct. 14, 1885
	Home, The Right Honourable the Earl of, Hirsel, Coldstream	Oct. 11, 1882
	Hood, James, Linnhead, Cockburnspath ...	Oct. 8, 1890
H	Hood, Miss Jean, Linnhead, Cockburnspath	
	Hope, Colonel Charles, Cowdenknowes, Earlston	Oct. 10, 1894
	Huggup, Robert, Low Hedgeley, Glanton ...	Oct. 8, 1890
*	Hughes, George P., Middleton Hall, Wooler ...	Oct. 20, 1856
	Hughes, Dr Pringle, Firwood, Wooler ...	Sept. 30, 1869
	Hume, David, Thornton, Berwick	Oct. 11, 1893
	Hunter, Rev. David, D.D., Galashiels	do.
	Hunter, Major James, Anton's Hill, Coldstream	Sept. 27, 1876
	Hunter, John, M.A., Beech Dale, Esplanade, Whitley	Oct. 20, 1884
	Hunter, Rev. Joseph, M.A., F.S.A. (Scot.), Cockburns- path	Sept. 29, 1875
	Inglis, Rev. R. C., Berwick-on-Tweed ...	Oct. 13, 1897
	Johnson, Edward, M.D., 6° Bickenhall Mansions, Glou- cester Place, London, W.	Oct. 12, 1881
	Johnson, W. H., Tweed Villa, Relugas Road, Edinburgh	Oct. 31, 1877
	Johnston, Rev. John, B.D., Eccles, Kelso ...	Oct. 10, 1894
	Johnstone, John Carlyle, M.D., The Hermitage, Melrose	Oct. 12, 1899

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	Joicey, Sir James, Bart., M.P., Longhirst, Morpeth	Oct. 12, 1887
	Jones, Rev. Ambrose, M.A., Stannington, Cramlington	Sept. 26, 1871
	King, W. Y., M.A., H.M. Inspector of Schools, 27 Rutland Street, Edinburgh	Oct. 9, 1899
	Laidlaw, James, Allars Mill, Jedburgh	Oct. 12, 1892
A	Laidlaw, Walter, Abbey Cottage, Jedburgh	
H	Langlands, Miss, 5 Strathearn Place, Edinburgh	
	Langston, Rev. A. E., Hebburn Vicarage, Newcastle	Oct. 10, 1883
	Leadbetter, Hugh Macpherson, Legerwood, Earlstoun	Oct. 10, 1888
	Leather, Major Gerard F. Towler, Middleton Hall Belford	Oct. 9, 1889
	Leather-Culley [see Culley]	
	Leishman, Rev. James F., M.A., Linton, Kelso	Oct. 9, 1895
	*Leishman, Rev. Thomas, D.D., F.S.A. (Scot.), 4 Douglas Crescent, Edinburgh	Oct. 20, 1856
	Leitch, David, Greenlaw	Oct. 14, 1885
	Leyland, C. J., Haggarston Castle, Beal	Oct. 10, 1894
	Little, William, National Bank of Scotland, Galashiels	Oct. 8, 1890
	Lockhart, Capt. William Elliott, Cleghorn, Lanark, N.B.	Sept. 27, 1876
	Lynn, Francis, F.S.A. (Scot.) Livingstone Terrace, Galashiels	Oct. 10, 1894
	Macadam, Wm. Ivison, F.I.C., F.C.S., F.S.A. (Scot.), etc., Professor of Chemistry, New Veterinary College, Analytical Laboratory, Surgeons' Hall, Edinburgh	Oct. 13, 1886
	Macaulay, Donald, Chemist, Alnwick	Oct. 12, 1898
	Mack, James S., S.S.C., Coveyheugh, Reston	Oct. 12, 1881
	Mackay, Matthew, 36 Highbury, West Jesmond, New- castle	Oct. 10, 1888
	Macpherson, Major James F., Caledonian United Service Club, Edinburgh	Sept. 25, 1868
	Macqueen, William Barrow, Solicitor, Procurator Fiscal, Duns	Oct. 14, 1891
	Maddan, William, British Linen Co.'s Bank, Berwick	Oct. 12, 1881
	Main, Alexander James, M.D., Alnwick	Sept. 26, 1870
	Mair, James, Parkside, Roker, Sunderland	Oct. 12, 1892
	Maitland, Hon. and Rev. Sydney George William, Thirlstane Castle, Lauder	Oct. 14, 1891
	Marjoribanks, Rev. Thomas, B.D., The Manse, Hound- wood	Oct. 12, 1899
	Marr, James, M.B.C.M., Ivy Lodge, Greenlaw, Ber- wickshire	Oct. 12, 1898
	Marshall, Robert, Woodmarket, Kelso	Oct. 8, 1890

	Martin, Rev. Thomas, B.D., Lauder	...	...	Oct. 13, 1886
	Mathison, Thomas, Wandylaw, Chathill	...	...	Oct. 10, 1888
	Maxwell, Capt. Wm. Hy. Stopford Heron, Muirhouse-law, Maxton, St. Boswells	...	...	Oct. 12, 1899
	McCreath, H. G., Galagate, Norham	...	...	Oct. 14, 1891
	McDonall, Rev. Patrick George, M.A., Oxford House, Clarence Parade, Southsea	...	...	July 25, 1861
	McDougal, Alexander Nisbet, Solicitor, Dans	...	...	Oct. 10, 1894
	McDowall, T. W., M.D., F.S.A. (Scot.), County Asylum, Cottingwood, Morpeth	...	...	Sept. 29, 1875
	McNee, George Fraser, 16 Chambers Street, Edinburgh	...	...	Oct. 12, 1899
	McVie, Samuel, M.B., Chirnside	...	...	Oct. 14, 1896
	Mein James, A. W., Hunthill, Jedburgh	...	...	Oct. 15, 1879
	Mercer, Ebenezer Beattie, Manufacturer, Stow	...	...	Oct. 12, 1899
	*Middlemas, Robert, Solicitor, Alnwick	...	...	June 25, 1863
H	Middlemas, Mrs Robert, Alnwick			
	Middlemas, Robert, junr., Bailiffgate, Alnwick	...	...	Oct. 12, 1898
	Middleton, Rev. Charles J. More, M.A., Crailing, Jedburgh	...	...	Oct. 10, 1894
	Millar, James, Solicitor, Duns	...	...	Oct. 12, 1899
	Miller, A. L., Castlegate, Berwick	...	...	Oct. 12, 1881
	Milliken, William, Swinhoe, Chathill	...	...	Dec. 20, 1900
	Milne Home, Captain David William, Caldra, Duns	...	...	Oct. 12, 1898
H	Milne Home, Miss Georgina S., Milne Graden, Coldstream			
H	Milne Home, Miss Jean Mary, Caldra, Duns			
	Milne Home, John Hepburn, Caldra, Duns	...	...	do.
	Mitchell, James, 220 Darnley Street, Pollokshields, Glasgow	...	...	Dec. 20, 1900
	Moore, C. E., Beaconsfield Terrace, Alnwick	...	...	do.
	Morton, Benjamin, 18 St. George's Square, Sunderland	...	...	Oct. 12, 1887
	Muckle, Robert, Manor House, Tynemouth	...	...	Oct. 9, 1895
	Muirhead, George, F.R.S.E., F.Z.S., F.S.A. (Scot.), Speybank, Fochabers, N.B.	...	...	Sept. 24, 1874
	Newbiggin, James Lesslie, Alnwick	...	...	Oct. 12, 1881
	Nisbet, George, Rumbleton, Greenlaw	...	...	Oct. 9, 1895
	Nisbet, James, Lambden, Greenlaw	...	...	Oct. 10, 1883
	*Norman, F. M., Commander R.N., Cheviot House, Berwick	...	...	Sept. 24, 1874
	Northumberland, His Grace the Duke of, K.G., Alnwick Castle	Oct. 9, 1889
	Oliver, Joseph, Eslington Park, Whittingham	Oct. 20, 1884

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	Paton, Henry, M.A., 120 Polwarth Terrace, Edinburgh	Oct. 13, 1897
	Paton, Lieut.-Col. James, Orailing, Jedburgh	Sept. 28, 1872
	*Paul, Rev. David, LL.D., 53 Fountainhall Road, Edinburgh	Sept. 30, 1870
H	Paul, Mrs. 53 Fountainhall Road, Edinburgh	
	Paulin, Thomas, Albion Brewery, Mile End, London	Dec. 20, 1900
	Paynter, Henry A., Freeland, Alnwick	Sept. 28, 1872
	Percy, Charles, Clifton House, Alnwick	Oct. 29, 1884
	Phillips, Maberley, F.S.A., Pevensey, Enfield	Oct. 11, 1893
	Phillipson, Sir George Hare, M.D., D.O.L., M.A., 7 Eldon Square, Newcastle	Oct. 20, 1884
	Pigg, George, Thornhill, Alnwick	Oct. 11, 1893
	Plummer, Charles H. Scott, Sunderland Hall, Selkirk	Oct. 12, 1892
	Porteous, Rev. Thomas, B.D., 7 Hart Street, Edinburgh	Oct. 10, 1894
	Purvis, Charles E., Westacres, Alnwick	Oct. 9, 1895
	Rankin, George, W.S., Lauder	Oct. 12, 1899
	Rea, Charles, Cleithaugh, Jedburgh	June 29, 1885
	Redpath, Robert, <i>Journal</i> Office, Newcastle	Oct. 9, 1889
	Renton, Robert Charles Campbell, Mordington, Berwick	Oct. 12, 1899
	Reid, Rev. John, M.A., Foulden, Berwick	Oct. 14, 1896
	Richardson, John, Little Mill, Lesbury, R.S.O.	Oct. 12, 1898
	Richardson, Ralph, F.R.S.E., 2 Parliament Square, Edinburgh	Oct. 12, 1892
	Riddle, Andrew, Yeavinger, Kirknewton	Oct. 12, 1898
	Ridley, Sir Edward, 48 Lennox Gardens, London, S.W.	Sept. 27, 1876
	Robert, Rev. Edward, St. Mary's, Alnwick	Oct. 8, 1890
	Roberts, Alexander F., Thornfield, Selkirk	Oct. 20, 1884
	Robertson, Dr E. C., Otterburn, Newcastle	Oct. 31, 1877
	*Robertson, Watson Askew [see Askew Robertson]	
	Robertson, William, Alnmouth	Oct. 10, 1883
	Robinson, William John, New Moor Hall, Morpeth	Oct. 10, 1888
	Robson, A. D., Solicitor, Galashiels	Oct. 9, 1895
	Romanes, Charles S., 50 Frederick Street, Edinburgh	Oct. 20, 1884
	Romanes, James, Harewood Glen, Selkirk	Oct. 12, 1899
	Roscamp, John, Shilbottle Colliery, Lesbury	Oct. 10, 1888
H	Russell, Miss, Ashiestiel, Galashiels	
	Rutherford, F. Elliot, 1 Oliver Place, Hawick	Oct. 12, 1887
	Rutherford, Henry, Fairington Crags, Roxburgh	Oct. 10, 1883
	Rutter, Rev. Evan, M.A., Spittal, Berwick	Sept. 25, 1873
	Sanderson, Richard Burdon, Waren House, Belford	Oct. 10, 1883
	Sanderson, Stephen, The Elms, Berwick	June 28, 1859
	Sanderson, William J., Eastfield, Aoklington	Dec. 20, 1900
	Scott, Adam Pringle, Banker, Amble	Oct. 13, 1897
	Scott, John C., Synton, Hawick	Oct. 12, 1892

	Sharpe, Rev. J., Heatherlie, Selkirk	Oct. 11, 1893
	Shaw, Robert Hogg, Leet Cottage, Coldstream	Oct. 12, 1892
A	Shaw, William, 3 Livingston Place, Galashiels	
	Short, T. B., Ravensdowne, Berwick	Oct. 10, 1888
	Simpson, David G., F.R.A.S., 199 Camberwell Grove, Denmark Hill, London	Oct. 10, 1894
	Simpson, Rev. Macduff, M.A., Edrom, Duns	Oct. 12, 1887
	Simpson, Richard H., Ravensmede, Alnwick	Oct. 13, 1897
	Simson, Thomas, Commercial Bank, Jedburgh	Oct. 12, 1887
	Skelly, George, Alnwick	Oct. 15, 1879
	Smail, Elliot Redford, 7 Bruntsfield Crescent, Edin- burgh	Oct. 12, 1899
	*Smail, James, F.S.A. (Scot.), 7 Bruntsfield Crescent, Edinburgh	July 26, 1866
	Small, Rev. Robert, Caddonfoot, Galashiels	Oct. 15, 1879
	Smith, Andrew, Whitcheater, Duns	Dec. 20, 1900
	Smith, J. C. R., Mowhaugh, Yetholm	Oct. 8, 1890
	Smith, R. Addison, S.S.C., 19 Heriot Row, Edinburgh	Oct. 12, 1892
	Smith, R. Colley, Ormiston House, Roxburgh	do.
	Smith, T. D. Crichton, Forestfield, Kelso	Oct. 12, 1881
	Smith, Gray [see Gray Smith]	
	Somervail, James Alexander, Hoselaw, Kelso	Oct. 13, 1897
H	Spoor, Mrs, 9 Lonsdale Road, Scarborough	
	Sprot, Lieut-General John, Riddell, Lilliesleaf	Oct. 20, 1884
	Sprott, Rev. George W., D.D., North Berwick	Sept. 27, 1876
	Steadman, William Charles, Abbey Green, Jedburgh	Oct. 14, 1896
	Steel, William Strang, Philiphaugh, Selkirk	Oct. 12, 1892
	Steele, Rev. James, Heworth Vicarage, Newcastle	Oct. 9, 1889
	Steele, William, F.S.A. (Scot.), Inland Revenue Office, Kelso	Oct. 8, 1890
	Stephenson, Robert, Chapel, Duns	Oct. 11, 1882
	Steven, Alexander, Stecarven, Berwick	Oct. 14, 1896
	Stevenson, James, Architect, Berwick	Oct. 10, 1888
	Stevenson, James, junr., Architect, Berwick	Oct. 9, 1896
	Stirling, Dr Stewart, 4 Coates Crescent, Edinburgh	Oct. 12, 1887
	Storey, Ralph Storey, Beanley, Alnwick	Oct. 14, 1891
	*Stuart, Charles, M.D., Hillside, Chirnside	Aug. 16, 1854
	Swan, William Bertram, Auctioneer, Duns	Oct. 13, 1897
	Sym, Rev. Arthur Pollok, B.D., Lilliesleaf, St. Boswells	Oct. 9, 1895
	Swinton [see Campbell Swinton]	
	Tancred, George, Weens House, Hawick	Oct. 13, 1886
	Tait, David W. B., W.S., Edenside, Kelso	Oct. 20, 1884
	Tait, James, Estate Office, Belford	Oct. 31, 1877
	Tate, George, Brotherwick, Warkworth	Oct. 9, 1889
	Tate, John, Oaklands, Alnwick	July 31, 1863

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Tate, Thomas, Allerburn, Alnwick	July 26, 1863
Tennant, Edward P., The Glen, Innerleithen	Oct. 12, 1881
Thew, Arthur H., 11 Bewick Road, Gateshead	...	...	Oct. 16, 1878
Thew, Edward, Birling Manor, Warkworth	...	...	Oct. 12, 1887
Thin, James, 54 South Bridge, Edinburgh	...	...	Oct. 10, 1883
Thin, John, Ferniehirst, Stow	...	...	Oct. 10, 1894
Thompson, Andrew, Glanton, Northumberland	...	...	Oct. 9, 1889
Thompson, Andrew, F.S.A. (Scot.), Schoolhouse, Glendinning Terrace, Galashiels	...	...	Dec. 20, 1900
Thompson, George H., Alnwick	...	...	Oct. 31, 1877
Thompson, Major R., Walworth Hall, Darlington	...	...	Sept. 26, 1872
Thomson, James, Shawdon Cottage, Redcar	...	...	Oct. 10, 1883
Thornton, Rev. Edward, M.A., Ancroft Vicarage, Beal	...	...	Oct. 14, 1891
Thorp, Thomas Alder, Narrowgate House, Alnwick	...	...	Oct. 8, 1890
Tristram, Rev. Canon, D.D., F.R.S., F.S.A., Durham	...	...	Oct. 15, 1879
Turnbull, George G., 58 Frederick Street, Edinburgh	...	...	Oct. 11, 1893
Turnbull, John, Royal Bank, Galashiels	...	...	Oct. 10, 1894
Turnbull, John, junr., 11 Slitrig Crescent, Hawick	...	...	Oct. 8, 1890
Turnbull, John Pringle, Alnwick	...	...	Sept. 30, 1870
Tweeddale, The Most Honourable the Marquess of, Yester House, Gifford	...	...	Oct. 12, 1881
Tweedmouth, Right Hon. Lord, Hutton Hall, Chirnside	...	...	Oct. 12, 1887
Veitch, David, Market Place, Duns	...	...	Oct. 12, 1895
Veitch, George, Northern Club, Edinburgh	...	...	Oct. 9, 1889
Veitch, James, Inchboony, Jedburgh	...	...	Oct. 12, 1899
Voelcker, John A., B.A., Ph.D., B.Sc., F.L.S., F.C.S., F.I.C., 20 Upper Phillimore Gardens, Ken- sington, W.	...	...	Oct. 9, 1895
Waite, William Home, Duns	...	...	Oct. 11, 1893
*Walker, Rev. Canon, M.A., Whalton Rectory, Newcastle	...	...	Oct. 16, 1878
H Warrender, Miss Margaret, Bruntisfield House, Edin- burgh	...	...
Watson, David McB., Hillside Cottage, Hawick	...	...	Sept. 29, 1875
Watson, Dr., Whittingham, Alnwick	...	...	Oct. 14, 1891
Watson, Robert Fraser, Hassendeanburn, Hawick	...	...	Oct. 8, 1890
Waugh, Andrew, High Street, Hawick	...	...	Oct. 13, 1886
Wearing, Henry, Allerton House, Jedburgh	...	...	Oct. 14, 1896
Weatherhead, J. K., Solicitor, Berwick	...	...	Oct. 16, 1878
Weatherhead, William, Solicitor, Berwick	...	...	Sept. 26, 1871
Weddell, Robert, Solicitor, Berwick	...	...	Oct. 13, 1880
Weir, R. S., 31 Linskill Terrace, North Shields	...	...	Oct. 14, 1891
Welford, Richard, Gosforth, Newcastle	...	...	Oct. 9, 1889
Weston, Walter, Inland Revenue Office, Alnwick	...	...	Oct. 9, 1895
Wheler, Edward Galton, Swansfield House, Alnwick	...	...	Oct. 8, 1890

Whitlie, Andrew, Commercial Bank of Scotland, 62			
Lombard Street, London	...	...	Oct. 12, 1899
Widdrington, Major Shallcross Fitzherbert, Newton			
Hall, Felton	..	...	Oct. 13, 1880
Wilkin, Henry George, Alnwick	...	...	Oct. 8, 1890
Willoby, Edward, Berwick	...	...	Oct. 12, 1881
Willyams, Humphrey John, Barndale, Alnwick			Oct. 12, 1898
Wilsden, Rev. Canon J. S., The Vicarage, Wooler			Oct. 12, 1887
Wilson, Rev. Beverley S., Brantingham Vicarage,			
Brough, Yorkshire	...	...	Sept. 24, 1874
Wilson, Edward J., Schoolhouse, Abbey St. Bathans			Oct. 13, 1897
Wilson, John, 26 Chapel Hill, Lauder Road, Edinburgh			Oct. 11, 1893
Wilson, Joseph, Solicitor, Duns	...	...	Oct. 12, 1881
Wilson, William, B.A., Hide Hill, Berwick	...		Oct. 31, 1877
H Wood, Mrs, Woodburn, Galashiels			
Workman, Rev. William, Stow	Oct. 12, 1887
Wright, J., Bank of Scotland, Duns	Oct. 11, 1894
Young, William, Berwick			
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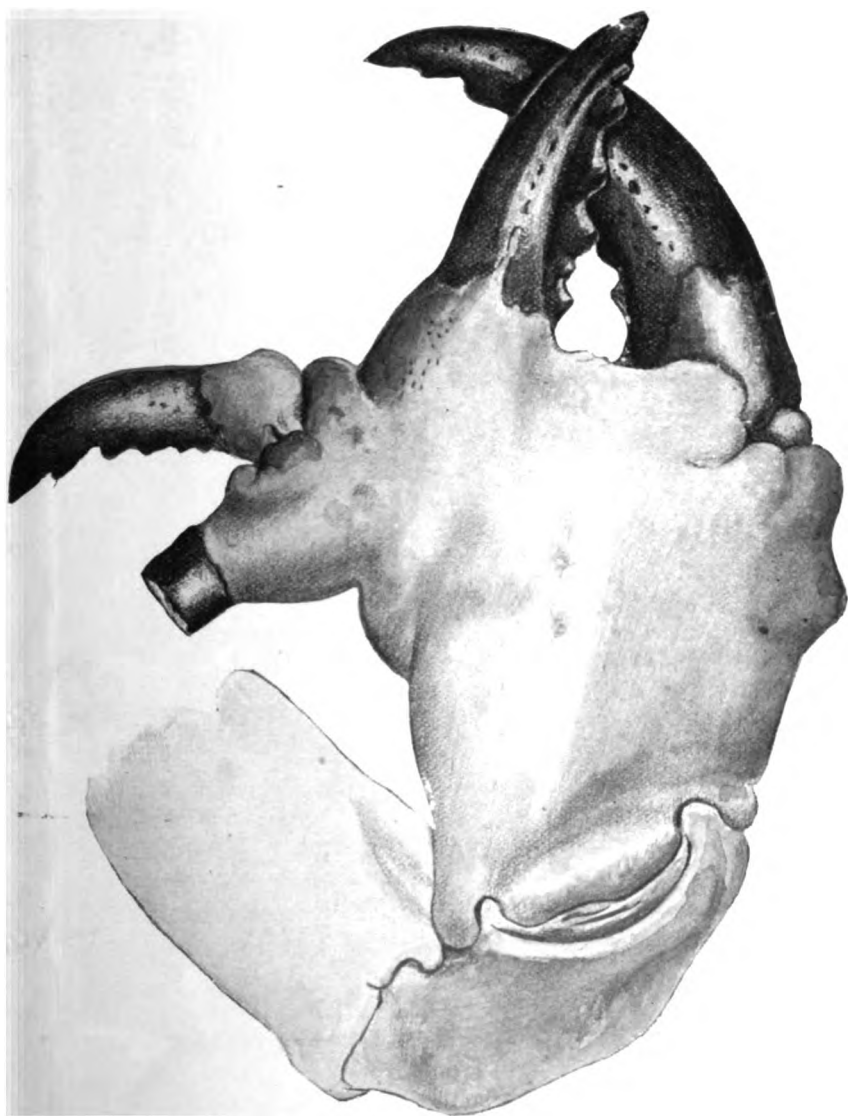
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MONSTROSITY IN A CRAB.



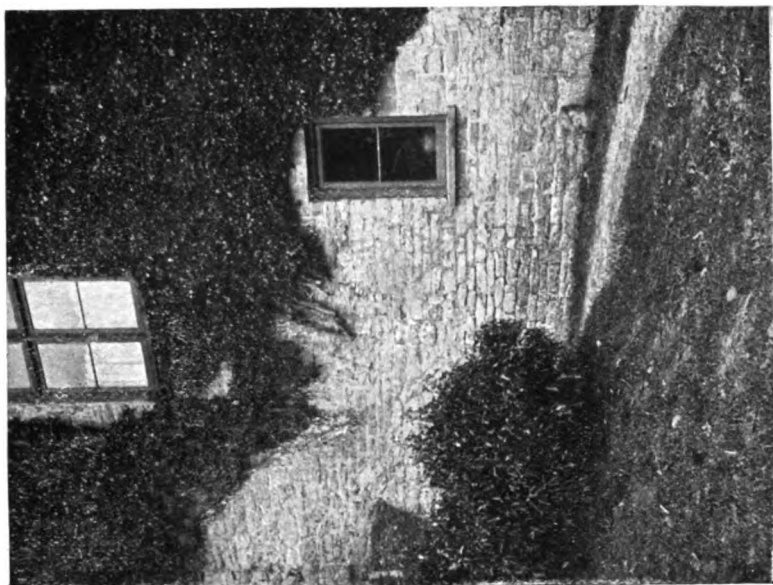
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BRONZE SPEARHEAD FOUND NEAR RUTHERFORD.

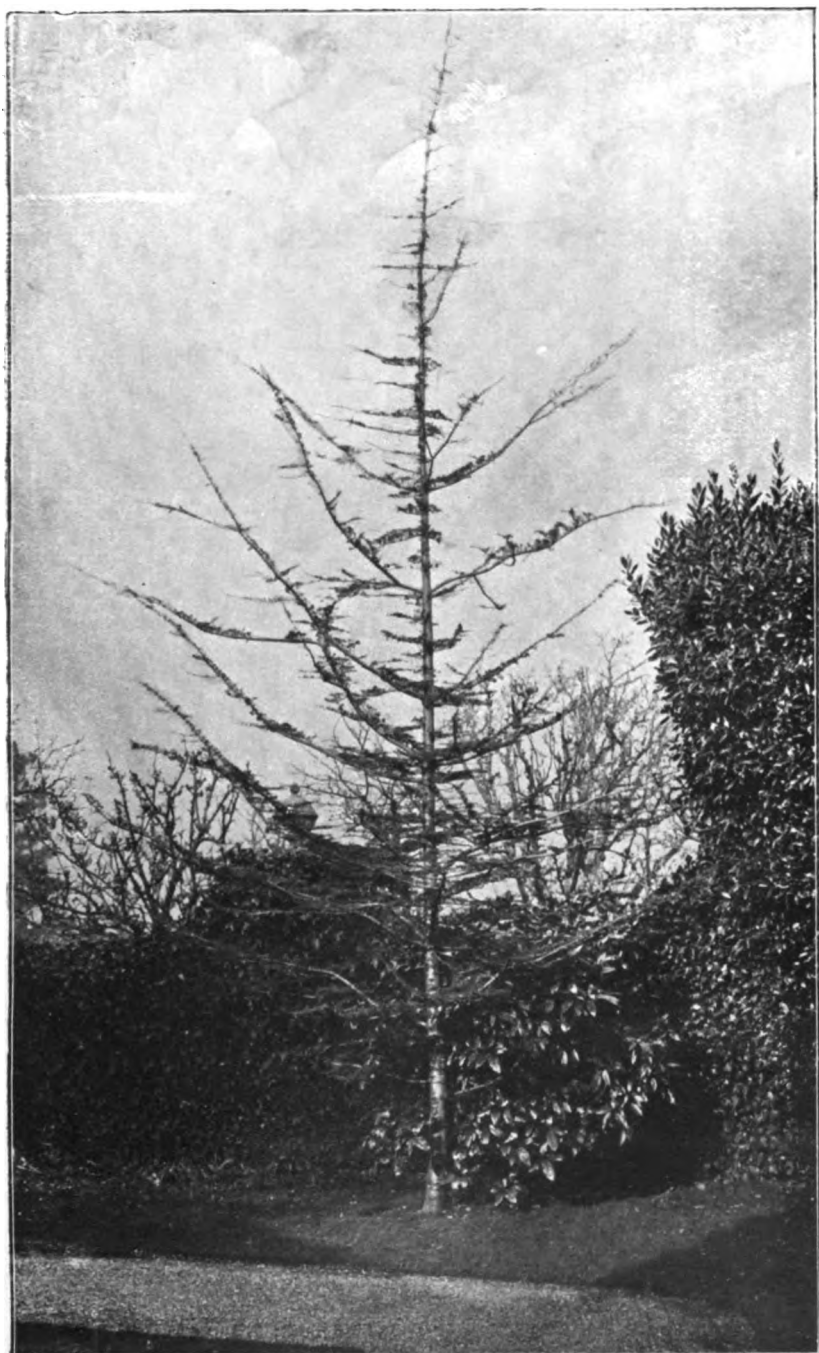
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ANCIENT APOTHECARY'S MORTAR.



IVY GROWING AT OVERBURY COURT, WORCESTERSHIRE, 1900, AFTER GROUND
ROOTS HAD BEEN SEVERED FOR 18 YEARS.



DECIDUOUS VARIETY OF CEDRUS ATLANTICA.

Chichester, 1899.



ELDER GROWING IN LIVE APPLE.

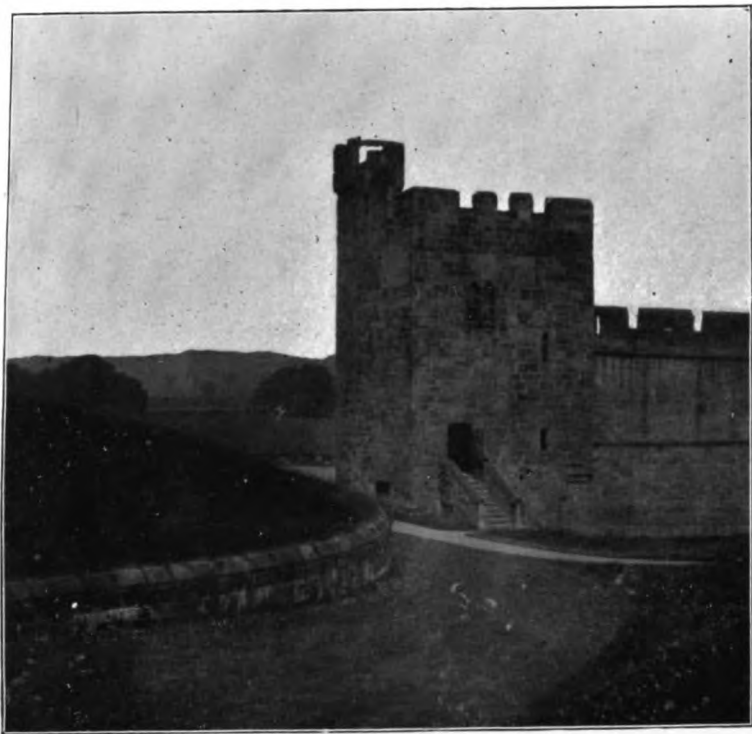
Overbury Court, Worcestershire, 1900.



BRIZLEE TOWER.

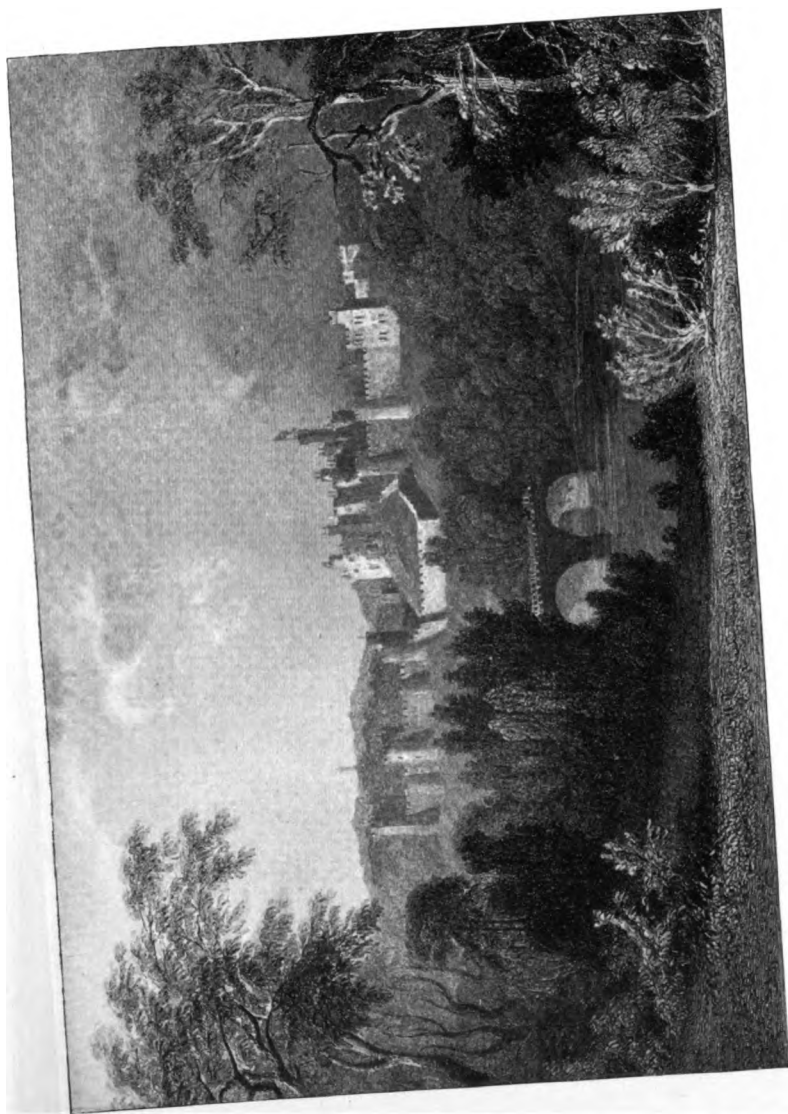


HULNE PRIORY.

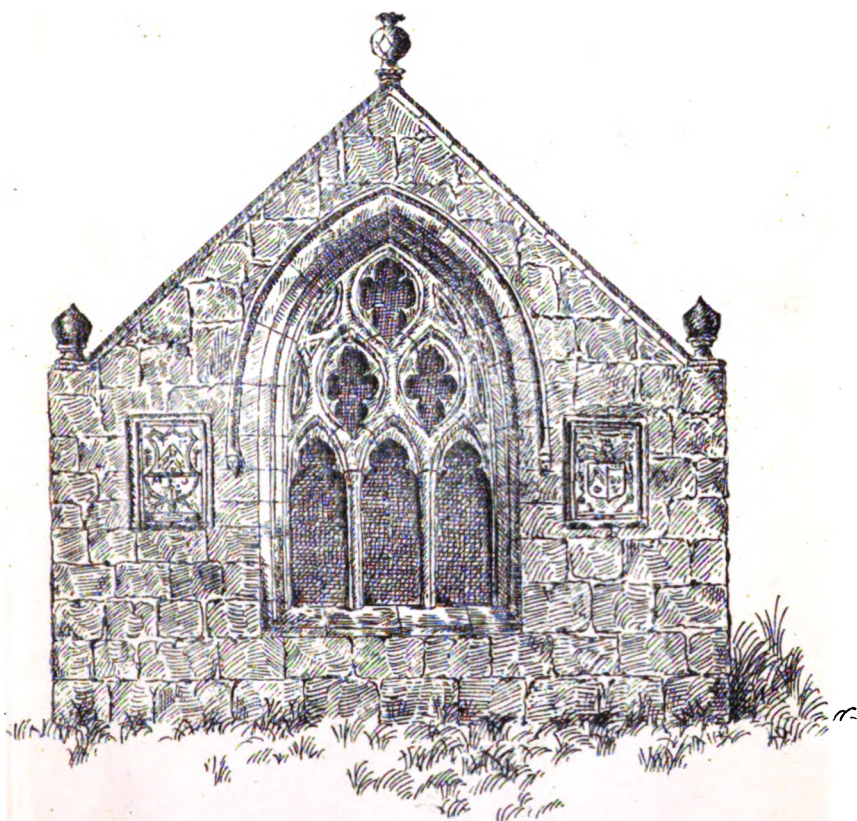


POSTERN TOWER ALNWICK CASTLE.

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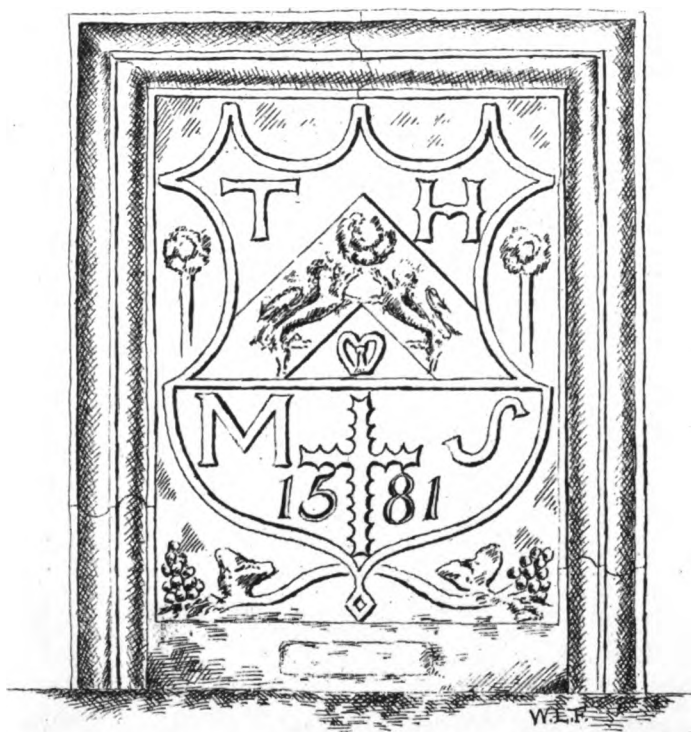
VIEW OF ALNWICK CASTLE BEFORE 1860, SHOWING THE
OLD FALCONER'S AND ARMOURER'S TOWERS.



WINDOW IN OLDHAMSTOCKS CHURCH.

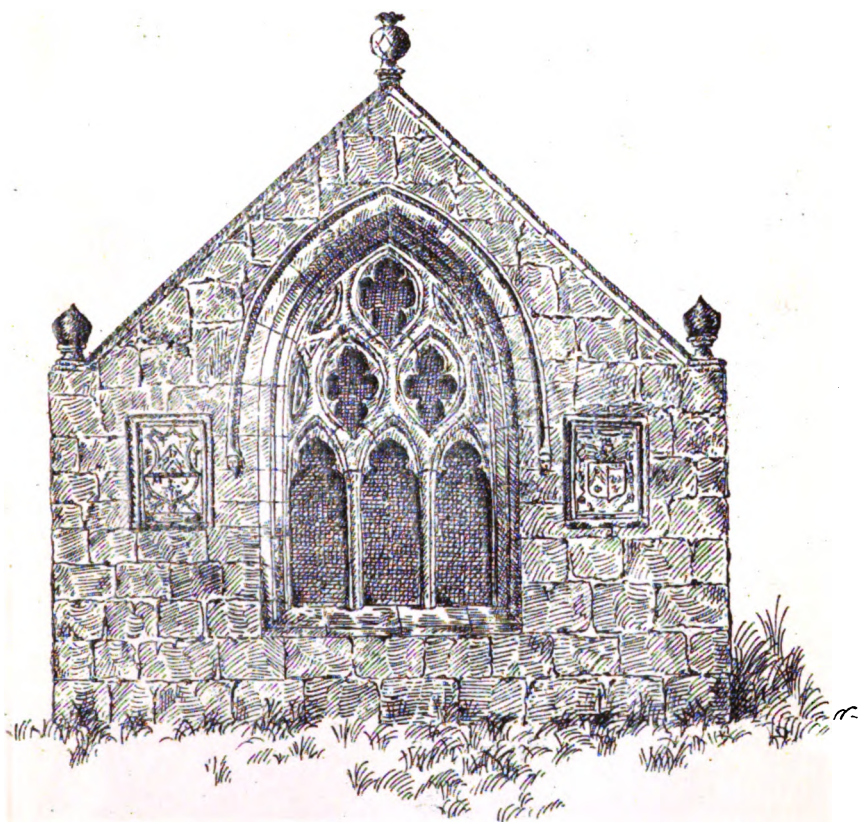


HERALDIC PANEL IN OLDHAMSTOCKS CHURCH.



HERALDIC PANEL IN OLDHAMSTOCKS CHURCH.

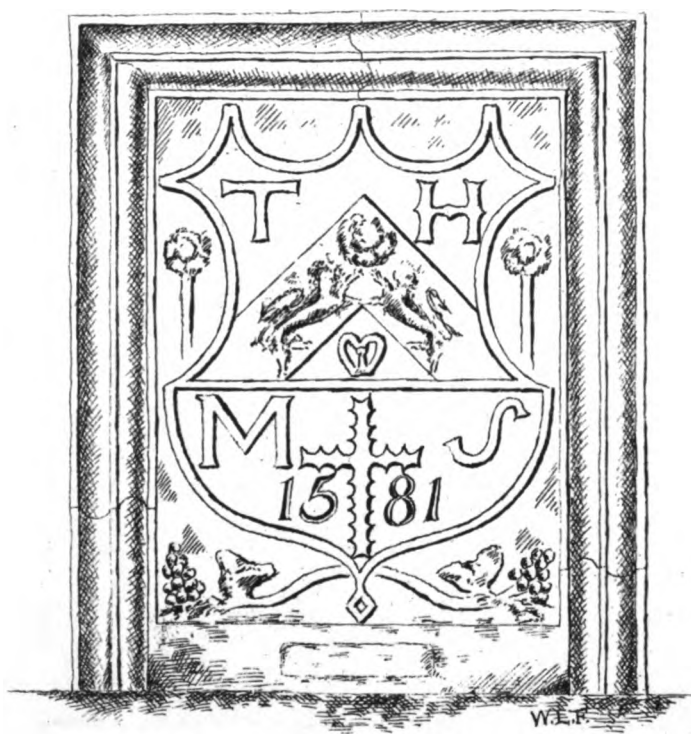
Smola



WINDOW IN OLDHAMSTOCKS CHURCH.



HERALDIC PANEL IN OLDHAMSTOCKS CHURCH.

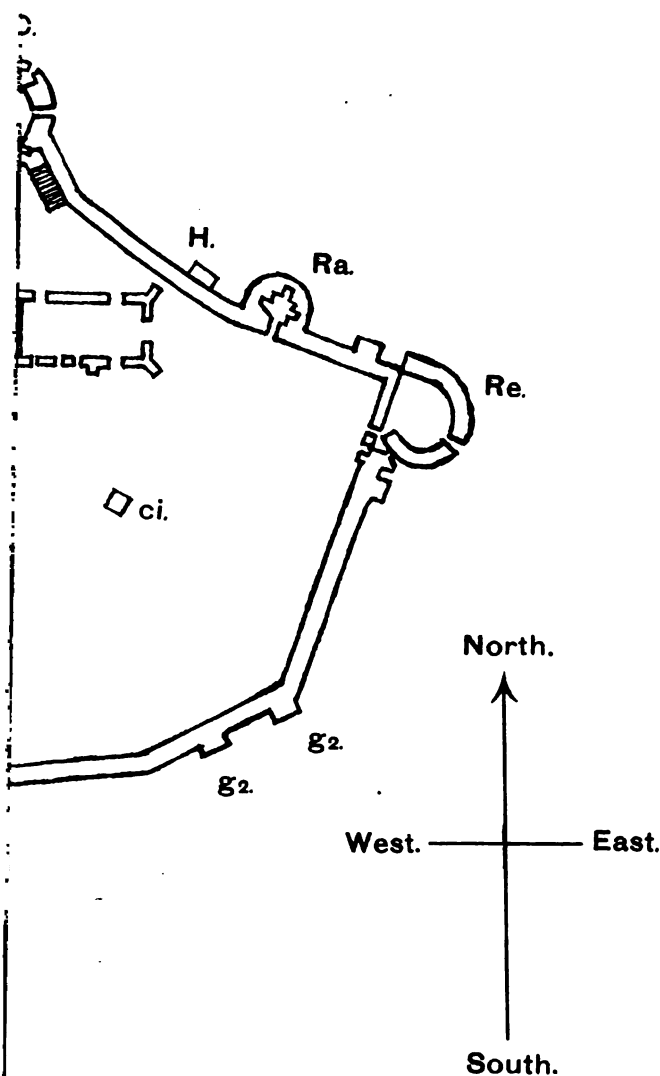


HERALDIC PANEL IN OLDHAMSTOCKS CHURCH.

Smola:

PLAN SHEWING WALLS AND TOWERS OF ALNWICK CASTLE,

Before and after 1750.





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